

## Diagnostic Engineering Publications

1410/7010

IBM-POUGHKEEPSIE  
December 31, 1964

Subject: Diagnostic Program C022D      1410 Alarm Program

Sequence Number      025  
Replaces      C022C

1. Card 001 is a STANDARD SYSTEM CONTROL CARD.  
Card 002 is a STANDARD CHANNEL 1 CONTROL CARD.  
Card 003 is a STANDARD CHANNEL 2 CONTROL CARD.
2. C022D is a slightly modified version of C022C. The routine on page 37 (pglin 1534-1555, addresses 03737 to 03857 "CHECK ADDRESS CHECK ALARM CIRCUITRY BY GENERATING AN ADDRESS WRAP AROUND LOW") must be bypassed on systems with 100K memory.

Enclosures:      75 Pages  
Card Deck for CARD ONLY SYSTEMS (as punched by UP51)  
8 Cards - Card Loader (1-7) and 1 Core Clear  
168 Cards No. 001 - 168      Data Cards  
1 Card      Execute Card

Distribution:      X 1410  
7010  
Other

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c022

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C022D  
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C022D

1410 ALARM PROGRAM

12/31/64

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C022

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**2.00.00.0      TEST DESCRIPTION**

**00.1      MODIFICATIONS**

**See Release Sheet**

**00.2      DESCRIPTION**

**This program is designed to test:**

1. All circuitry used to detect machine and program errors that result in SYSTEM CHECKS. (In this writeup and program, the words "SYSTEM CHECKS" and "ALARMS" are synonymous.)
2. All circuitry used to cause a MASTER ERROR as a result of a SYSTEM CHECK
3. All MASTER ERROR circuitry that is used, or required, to properly cause an error stop, error restart and error reset - restart as determined by the CHECK CONTROL switch setting.

**This program checks all circuits in the above categories except those listed in Appendix I of this writeup.**

**This program assumes that the current CPU error detection or reliability program has been successfully run with no alarms occurring.**

**This program is made in two sections. Under normal operation, only the first, or "automatic", section is run. If TAD4 is set to a one, the second, or "manual", section will also be run.**

**AUTOMATIC SECTION.** This section includes the majority of the program. It checks all the alarm circuitry that can be checked by program means with the check control switch in normal, restart and reset-restart modes. The word "automatic" is probably a misnomer since several manual interventions are required to change switch settings. Also, although the majority of the possible errors in this section will be detected

by program means, some require visual observation by the operator as indicated by program typeouts.

The first routine of the program operates in normal mode, and requires the operator to perform checks using the "CHECK TEST" switches. Error indications are entirely visual.

The next routine operates in restart mode. Its errors will be detected by program means, unless an "alarm" stop occurs.

The majority of the automatic section then operates in reset-restart mode. All errors are detected by program means except for the possibility of an "alarm" stop.

Five routines (six routines if you have a 1405) will then operate in normal mode. Error indications are completely visual for these routines.

Unless TAD4 is set to one, the program will normally end here.

**MANUAL SECTION.** This section is termed "Manual" because each of the eight routines included require the operator to ground a pin on the backpanel of the CPU. As stated earlier, this section will be run only if requested by setting TAD4 to a one. Since this section checks only circuit inputs, and no transistors, it should be necessary to run it only on a new system, or after an engineering change has been completed. See Appendix I for specific circuitry checked by the manual section. (The manual section should also be run upon initial receipt of this program.) Because of the grounding of backpanel pins, the routines in the manual section will not necessarily check the settings of the standard TADS. You will have to refer to each individual routine listing to see how they handle looping, error halts, etc.

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00.3 EQUIPMENT REQUIRED

1410 or 1410 ACC CPU, Console Printer, any size memory.

Other equipment used only if it is attached to your system:

1311 IMPAC with SEEK OVERLAP and SCAN features. (Program performs only SEEK and SCAN operations. It will not WRITE)

1405 FILE (Program will write on the C. E. tracks only.)

00.4 CARD DECK

7 Cards ..... Load Program

1 Card ..... Core Clear Card

167 Cards ..... Program  
(Cards numbered 001 - 167)

Card numbered 004 contains all TADS

Card numbered 001 is STANDARD SYSTEM  
CONTROL CARD

Card numbered 002 is STANDARD  
CHANNEL 1 CONTROL CARD

Card numbered 003 is STANDARD  
CHANNEL 2 CONTROL CARD

1 Card..... Execute Card (Branch to 2000)

00.5 MACHINE E. C. LEVEL

251818

00.6 PASS LENGTH

2.5 Minutes - Auto Section Only (Normal Pass)

6.5 Minutes - Auto and Manual Sections

The actual machine running time is very short. The above times represent the average times required to run the program with all manual interventions included.

2.00 .01.0

### LOADING PROCEDURES

1. Display memory location 00000.

2. Alter to —

vv  
RL%1100011\$. For channel 1 reader

vv  
XL□1100011\$. For channel 2 reader

vv  
RL%B000011\$. For channel 1 tape\*

vv  
XL□B000011\$. For channel 2 tape\*

3. Set to RUN, RESET, START.

\*Note: This procedure will load the current diagnostic tape control program. To select a specific diagnostic from tape, refer to the control program's writeup.

2.00 .02.0

### OPERATING PROCEDURES

Load Program.

Program will normally type its identity followed by specific instructions to the operator. At its completion, it will return to the load program.

Normal program operation may be altered at any time by using the "Inquiry Request Key" and the "Program Alter Routine" to set one, or several, of the following TADS to "1".

TAD	ADDRESS	IF NOT 1 (NORMAL)	IF SET TO ONE
0	01000	Normal Typeouts	Bypass typeouts for scoping. (Typeouts giving directions to the operator will not be bypassed.)

<u>TAD</u>	<u>ADDRESS</u>	<u>IF NOT 1 (NORMAL)</u>	<u>IF SET TO ONE</u>
1	01001	No Loops	Loop present routine.
2	01002	No Error Halts	Halt on error.
3	01003	Single Program Pass	Repeat program.
4	01004	Run Auto Section Only	Run entire program.
5	01005	No Effect	Repeat the RESET-RESTART MODE routines in the Auto Section.

## 2.00.03.0

OPERATING HINTS AND COMMENTS

Most of the 1410 CPU incorporates "Fail Safe" circuitry. However, in order for this fail safe circuitry to be effective, the "System Check" or "Alarm" circuitry must be capable of detecting circuit and program errors. Much of the alarm circuitry is not "fail safe". This program is meant to fill this gap. After successful completion of this program, you should be able to assume that your alarm circuitry will detect all errors that it is designed to detect. (Exception - Failures of those circuits listed in Appendix I.)

There is a HALT in the program listing for every conceivable alarm circuit failure. (This includes the errors that must be detected by visual means.) Directly following each of these halts in the listing is a brief statement indicating the probable reason for the failure. Most of these halts will also have a logic page and scope point listed after the error statement.

These error statements and scope points will be accurate only if all previous routines have been successfully run. The first error indication in the program should always be the most accurate.

When it is desired to loop a routine for scoping, and error timeouts are not desired, setting TADS 0 & 1 to 1, and TAD2 to 1, by use of the Program Alter Routine, will result in a tighter loop than if only TAD 1 is a one.

When running the manual section of the program, the standard TADS will not necessarily have any effect on the program operation. For these eight routines, it will be necessary to refer to each routine listing in order to determine how to scope loop, etc.

2.00 . 04.0

### PROGRAM STOPS AND RESTARTS

04.1

#### PROGRAM STOPS

There are several program stops to allow the operator to change switch settings, visually check for errors, etc. In all such cases, the halt will be preceded by a typeout of directions to the operator. (See Section 2.XX.05.1 for typeout explanations.)

Every program detected error will cause an error halt to occur if TAD 2 is a one. These halts are provided for every program detectable error. Refer to the IAR address in the listing for an explanation of a specific error.

04.2

#### PROGRAM RESTARTS

02000      Program may be restarted from the beginning at any time by starting at address 2000.

00030      You may restart the program, at the beginning of the last routine run, by starting at address 30 at any time.

FIRST ADDRESS  
OF ANY ROUTINE

You may restart the program at the first address of any routine at any time.

You MAY NOT restart the program by a RESET-START action except upon completion of the program. Address 00001 is necessarily used by the program for automatic reset-restarts.

2.00.05.0      **TYPEOUTS** (See Appendix II for examples of actual program typeouts.)

05.1      **NON ERROR TYPEOUTS**

**C022C**

Program identification typed at program beginning.

**CONTROL CARD INFO IS MISSING**

You should never receive this typeout. It is an indication that the operator did not enter system and channel control card information.

**PRINT CTRL TO NRML**

Place the PRINT OUT CONTROL switch in the NORMAL position and start.

**CHK CTRL TO NRML**

Place the CHECK CONTROL switch in the STOP NORMAL position and start.

**CHK TST SW CHK:**

1. COMP RESET, PRESS A CHK TST SW, START

2. CHECK FOR:

STOP WITH ALL PROCESS ALARMS ON  
TYPEOUT:

SW.1-E ####S

SW.2-E BLANK

SW.3-E 00002

3. IF WRONG-ERR XXXXX

4. REPEAT 1-3 FOR 3 CHK TESTS

**FOR NEXT CHK-RESET, START, START**

This series of typeouts is provided by the first routine of the program. At the completion of the typeouts, depress (and hold in) check test switch 1. Computer reset, and press start. All process alarm indicators should come on. The typeout should be as illustrated for "SW.1". (Plus AAR, BAR, etc.)

The same actions should be taken for check test switches 2 and 3. (Switch 2 IAR typeout should be bbbbb unless you have a 10K machine. In this case, it should be 0bbbb.)

If all process alarm indicators are not on for each switch or if the typeout is incorrect, refer to the error halt address indicated above by XXXXX.

To continue the program, COMPUTER RESET, and depress START twice.

#### INHIBIT PRINTOUT

Place the PRINTOUT CONTROL switch to the INHIBIT position and start.

#### CHK CTRL TO RSTRT

Place the CHECK CONTROL switch in the RESTART position and start.

#### IF THIS MODE ERR STOPS-ERR XXXXX

This typeout is provided after placing the CHECK CONTROL switch in the RESTART or RESET-RESTART position. If, while the switch is so positioned, the machine should stop due to a SYSTEM CHECK, refer to the error halt at the address indicated above by XXXXX.

#### CHK CTRL TO RST-RSTRT

Place the CHECK CONTROL switch in the RESET-RESTART position and start.

#### 1405 C. E. TST & 1405 CMP DISABLE TO ON

This typeout will occur only if your channel control cards indicate you have a 1405 attached to your system. Place the C.E. TEST and the UNEQUAL COMPARE INOP switches to on. Also, the low order 1405 module for each channel should be made ready.

**1405 SWITCHES TO NORMAL**

This typeout will occur at the end of the program if the program has requested 1405 switch changes. Restore 1405 switches to normal.

----- ALARM:

**OFF-ERR XXXXX**

**ON-OK, COMP RESET, START**

When this typeout occurs, the alarm indicated by the ---'s should be on. If it is not, refer to the error halt in the listing at the address indicated by the XXX's. To continue the program, computer reset and start.

----- ALARM:

**NOT ON ALONE-ERR XXXXX**

**ON ALONE-OK, RESET, START**

When this typeout occurs, the alarm indicated by the ---'s should be on, and only that alarm should be on. If it is not on, or if other alarms are on in addition, refer to the error halt in the listing indicated above by the XXX's.

**END C022 AUTO**

This typeout indicates the end of a normal pass of C022.

**GRND 11D2D22K&START**

Manual section typeout. Ground the indicated backpanel point and depress START.

**UNGRND&START**

Manual section typeout. Remove the ground wire and depress start.

## 1. GRND 11D2C09B&amp;START

## 2. -----ALARM:

NOT ON ALONE-ERR XXXXX

ON ALONE-OK, UNGRND, RESET, START

Manual section typeout. Ground the indicated backpanel point and depress START. The alarm indicated above by ---'s should come on (and no other alarms should come on). To continue the program, remove the ground wire, computer reset and start.

If "1." does not specifically say START, the indicated alarm should come on as soon as the ground wire is attached.

## 1. GRND 11D2B24C&amp;START

## 2. SHUD STOP ON -----ALARM

## 3. IF NOT-ERR XXXXX

## 4. IF OK-UNGRND, RESET, START

Manual section typeout. Ground the indicated backpanel point and depress START. Check to see that the alarm indicated by the ---'s comes on and that the computer stops. To continue the program, remove the ground wire, computer reset and start.

END C022

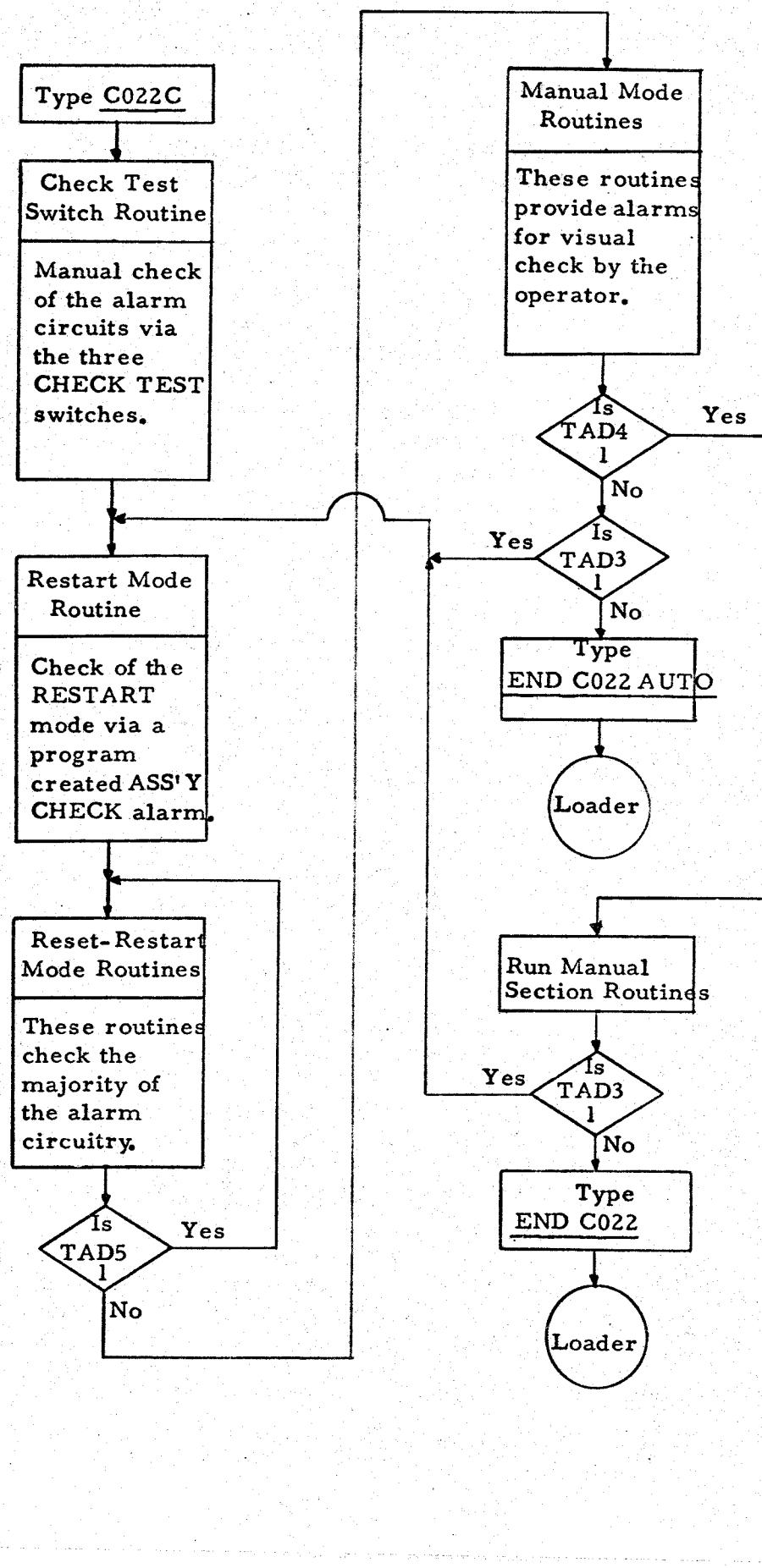
Typed at the completion of a complete pass of the program.

05.2

ERROR TYPEOUTS

## ERR XXXXX

This typeout is an indication that a program detected error occurred. Refer to the error halt address in the listing (indicated above by XXXXX) for specific error information.



2.00..07.0

APPENDIX I

07.1

ALARM CIRCUIT INPUTS CHECKED ONLY BY THE  
MANUAL SECTION OF PROGRAM.

## LOGIC 18.14.08

Circuit 4F	Input H	A channel V.C.
Circuit 4G	Input A	A Reg Set Error
Circuit 4H	Input Q	Address Exit Error
Circuit 4I	Input H	A Char Select Error
Circuit 4G	Input B	B Reg Set Error
Circuit 4I	Input G	Op Mod Reg Set Error
Circuit 4H	Input P	B Char Sel Error

## LOGIC 18.14.01

Circuit 3D	Input E	A Char Sel Error
Circuit 3E	Input R	A Char Sel Error
Circuit 3B	Input D	A Char Sel Error
Circuit 3C	Input R	A Char Sel Error

07.2

CAUTION - THE FOLLOWING ALARM CIRCUITRY IS  
NOT CHECKED BY THIS PROGRAM.

It would be impractical for a diagnostic program  
to be of any assistance in checking the following  
groups of circuits:

## LOGIC 12.12.46

All circuits meant to detect multiple cycle  
control latches being on at the same time. (The  
circuits on this logic page that are meant to  
detect the lack of any cycle control latch being  
on are checked in the auto section of the program.)

## LOGIC 18.14.01

Circuit Inputs 3B-E, 3C-G, 3D-D and 3E-G.

These four circuit inputs are used to detect  
multiple A Character Selections. Specifically,  
they are meant to check for OP MOD - F2  
multiple selections and E2 - F2 multiple  
selections.

**C022 APPENDIX I**

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**LOGIC 12.12.43**

**Circuits 1D, 1E, 2E, 2F, 3F.**

**Circuit Input 1G-G.**

**These circuits are for the purpose of detecting  
a NO LAST LOGIC GATE condition, and  
causing an INSTRUCTION CHECK as a result.**

## 2. .07.3 APPENDIX II - AUTO SECTION TYPEOUTS

R C022A  
R PRINT CTRL TO NRML  
R CHK CTRL TO NRML

C022 APPENDIX II

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S 01789 01788 01188 .V 000 T0bb  
R CHK TST SW CHK:  
R 1.COMP RESET,PRESS A CHK TST SW,START  
R 2.CHECK FOR:  
R STOP WITH ALL PROCESS ALARMS ON  
R TYPEOUT:  
R SW.1-E #####  
R -----  
R SW.2-E BLANK  
R SW.3-E 00002  
R 3.IF WRONG-ERR 02579  
R 4.REPEAT 1-3 FOR 3 CHK TESTS  
R FOR NEXT CHK-RESET,START,START

S 02579 02580 02579 .A 77b T0bb

E ##### ISVYI ISVXZ Jb JJY bbbb

E bbbb 02580 02579 bb bb bbbb

E 00002 02580 02579 Jb JJY bbbb

S 02579 02580 02579 .A 77b bbbb

R INHIBIT PRINTOUT  
R CHK CTRL TO RSTRT

S 02714 02713 01188 .V 777 T0bb  
R IF THIS MODE ERR STOPS-ERR 02853  
R CHK CTRL TO RST-RSTRT  
R 1405 C.E.TST & 1405 CMP DISABLE TO ON  
R IF THIS MODE ERR STOPS-ERR 02997  
R CHK CTRL TO NRML  
R IO INTRLK ALARM:  
R OFF-ERR 06392  
R ON-OK,COMP RESET,START

R ADDRESS CHK ALARM:  
R OFF-ERR 06508  
R ON-QK,COMP RESET,START

R RBC INTRLK ALARM:  
R OFF-ERR 06784  
R ON-OK,COMP RESET,START

R INSTRUCT CHK ALARM:  
R NOT ON ALONE-ERR 06953  
R ON ALONE-OK,RESET,START

R OP REG SET ALARM:  
R NOT ON ALONE-ERR 07095  
R ON ALONE-OK,RESET,START

R 1405 SWITCHES TO NORMAL  
R END C022 AUTO

## 2.00.07.4 APPENDIX II - MANUAL SECTION TYPEOUTS

### C022 APPENDIX II

R CHK CTRL TO RST-RSTRT  
R GRND 11D2D22K&START  
R UNGRND&START  
R CHK CTRL TO NRML  
R 1.GRND 11D2D26D&START  
R 2.A REG SET ALARM:  
R      NOT ON ALONE-ERR 07607  
R      ON ALONE-OK,UNGRND,RFSET,START  
  
R 1.GRND 11D2C09B&START  
R 2.ADDR EXIT ALARM:  
R      NOT ON ALONE-ERR 07762  
R      ON ALONE-OK,UNGRND,RFSET,START  
  
R 1.GRND 11D2C07D&START  
R 2.A CHAR SEL ALARM:  
R      NOT ON ALONE-ERR 07913  
R      ON ALONE-OK,UNGRND,RFSET,START  
  
R 1.GRND 11D2C04P  
R 2.A CHAR SEL ALARM:  
R      NOT ON ALONE-ERR 08056  
R      ON ALONE-OK,UNGRND,RESET,START  
  
R 1.GRND 11D2B23P&START  
R 2.B REG SFT ALARM:  
R      NOT ON ALONE-ERR 08214  
R      ON ALONE-OK,UNGRND,RESET,START  
  
R 1.GRND 11D2B24C&START  
R 2.SHUD STOP ON OP MOD SET ALARM  
R 3.IF NOT-ERR 08408  
R 4.IF OK-UNGRND,RESET,START  
  
R 1.GRND 11C3H22B&START  
R 2.SHUD STOP ON B CHAR SEL ALARM  
R 3.IF NOT-ERR 08601  
R 4.IF OK-UNGRND,RESET,START  
  
R 1435 SWITCHES TO NORMAL  
R END C022

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1410 ALARM PROGRAM  
OPCODE OPERAND

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CT ADDRS INSTRUCTION

```

10C2 * ***** PROGRAM STARTS AT ADDRESS 2000 *****
10C3 * ***** *****
10C4 * ***** CTL 2 *****
10C5 LOAD EQU 400
10C6 TOPMEM EQU 9899
10C7 WRIBCT EQU 9691
10C8
10C9

1010 ***STANDARD TADS.*** ORG 10C0 ***NOT ONE**** ****ONE**** 01000
1011 TADO DC 2 2 TYPEC OUTPUTS BYPASS TYPING 1 01000
1012 TADI DC 2 2 NO LOOPS LOOP ROUTINE 1 01001
1013 TAD2 DC 2 2 NO ERROR HALTS HALT ON ERROR 1 01002
1014 TAD3 DC 2 2 ONE PROG. PASS REPEAT PROGRAM 1 01003
1015
1016 ***SPECIAL TADS.*** AUTO SECT ONLY ENTIRE PROGRAM 1 01004
1017 TAD4 DC 2 2 NO EFFECT REPEAT RESET- 1 01005
1018 TADS DC 2 2
1019 *
1020 *
1021 * DCW 6
1022 ORG 1010
1023
1024

1025 ***CHECK TADS 0,1 AND 2 CLOSED SUBROUTINE.*** 7 01010 6 01117 8
1026 CKTAC SBR EXIT5
1027 CKTACA MLCS 2AA,COMTAD SET TADO INDICATOR 12 01017 D 09292 01119 3
1028 BCE *E13,TAD0,1 GO IF TADO IS A ONE 12 01029 B 01053 01000 1
1029 MLCS 2 2,COMTAD CLEAR TADO INDICATOR 12 01041 D 09293 01119 3
1030 MLNS 212,COMTAD SET TADI INDICATOR 12 01053 D 09294 01119 1
1031 BCE *E13,TAD1,1 GO IF TADI IS A ONE 12 01065 B 01089 01001 1
1032 MLNS 2 2,COMTAD CLEAR TADI INDICATOR 12 01077 D 09293 01119 1
1033 BCE *E12,TAD2,1 GO IF TAD 2 IS A ONE 12 01089 B 01112 01002 1
1034 A 22,COMTAD SET TAD2 INDICATOR 11 01101 A 09295 01119
1035 EXIT B 0 7 01112 J 00000
1036 COMTAD DCW 2 2

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1610 ALARM PROGRAM  
OPCOD OPERAND

CT ADDRS INSTRUCTION

PCIN	LABEL	CT	ADDRS	INSTRUCTION
1038	**STANDARD TYPE ROUTINE 2 WITH DELAY ADDED.	7	01120	G 01135 8
1039		10	01127	M ZT0 00000 N
1040	TYPL SBR TYP268			TYPE MESSAGE
1041	TYP2 WCP 0	7	01137	G 01186 B
1042	SBR TYP365	7	01144	R 01127 2
1043	BCBL *-23	7	01151	R 01158 6
1044	BA1 *61	7	01158	D 09299 09303 X
1045	MLCWA 02400.02222A	11	01170	S 09304 09303
1046	S 01.02222A			DELAY FOR CARRIAGE
1047	TYP3 02 0	7	01181	J 00000 V
1048	*-24	7	01186	J 01170
1049	NUP	1	01195	N
1050	*****			
1051	**CONTROL INDICATORS.	01242		
1052	QNG 01242	3	01244	NOT APPLICABLE TO 7010
1053	DCW AX02	3	01247	SEQUENCE NUMBER IS 025
1054	DC 8025A	2	01249	LAST 1000S IS 09.SYS1.CHNL.CHN2
1055	DC 0.92			*****
1056	*****			
1057	**PROGRAM IDENTIFICATION.	5 01254		PROGRAM IDENTITY
1058	IDENT D DCW ACO22D.A.G			

1410 ALARM PROGRAM  
OPCODE OPERAND

PGLIN LABEL CT ADDRS INSTRUCTION

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PGLIN	LABEL	CT	ADDRS	INSTRUCTION
1060				
1061	STANDARD SYSTEM CONTROL CARD.			
1062	ORG 1256 CHARACTER & PURPOSE	COL	01256	
1063	SYS1 DC 0,1,X - 1410,1410ACC,7010 13		1 01256	
1064	61 DC 0,1,3,5,7,9-10,29,40,60,80,100K 14		1 01257	
1065	62 DC 0,1,3,5,7,9-10,29,40,60,80,100K 14	SPARE	15 01258	
1066	63 DC 1,2-CHNL1 100,132 CHAR PRINTER 16		1 01259	
1067	64 DC 1,2-CHNL2 100,132 CHAR PRINTER 17		1 01260	
1068	65 DC 1,2 SPARES 18-19		18-19 2 01262	
1069	66 DC 1 - OVERLAP 20		20 1 01263	
1070	67 DC 1 - PRIORITY ALERT 21		21 1 01264	
1071	68 DC 1 - SPARES 22-24		22-24 3 01267	
1072	69 DC 1 - CHANNEL ONE PRESENT 25		25 1 01268	
1073	611 DC 1 - CHANNEL TWO PRESENT 26		26 1 01269	
1074	612 DC 1 - SPARES 27-32		27-32 6 01275	
1075	613 DC 1 - SPARES 33		33 1 01276	
1076	619 DC 1 - REAL TIME CLOCK 34-45		34-45 12 01288	
	620 DC 1 - SPARES 34-45			
	632 DC 1 - SPARES 34-45			

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12201 ***** *CLOSED SUBROUTINE TO PLACE AN INVALID CHARACTER IN LOCATION 00110
12202 ***** *SOF CORE MEMORY.
12203 ***** SET RETURN ADDRESS
12204 CLINV0 SBR CLINVA&5 SET RETURN ADDRESS
12205 CW CLINV&1
12206 SAR 20
12207 CS 120 ATTEMPT TO CLEAR LAST ONE
12208 CLINV&B CW CLINVA&1
12209 SAR 20
12210 MLCWA @$.503.112 STORE EDIT B FIELD
12211 MCE XEDITA.112 ***GENERATE INVALID BLANK
12212 * IN ADDRESS 0110
12213 CLINVA B O ****
12214 ****
12215 *CLOSED SUBROUTINE TO CLEAR INVALID CHARACTER AT LOCATION ON 00110
12216 CLEARC SBR CLERA&5 SET RETURN ADDRESS
12217 CW CLERA&1
12218 SAR 20
12219 CS 120
12220 CLEARA B O GO INTERROGATE TADS 061&2
12221 EUROPE C B CKTAD BRANCH IF EUROPEAN EDIT
12222 C BBE *E8,SYSL&5.1
12223 C B *E13
12224 C MLCA PATCH,&$.503 CHANGE = 10 .
12225 C B START&19
12226 PATCH C DCW @.503
12227 ORG 2000
12228 START MRCWG XROUTN.30 SET TO RSTRT RTNS AT 30
12229 C B EUROPE
12230 BAI *E1
12231 MLCWS @00000000,X1 SET X1 FOR ROUTINE USE
12232 WCP IDENT TYPE PROGRAM IDENTITY
12233 BAI *-16
12234 CS TOPMEM SET UP IN CASE OF 1405
12235 CS G am&a,TOPMEM&1 GM-WM TO 09900
12236 MLCWS

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1410 ALARM PROGRAM  
OPCODE OPERAND

PGLIN	LABEL	CT	ADDRS	INSTRUCTION
1238	*****			
1239	*ENSURE THAT CONTROL CARD INFO IS PRESENT.			
1240	CARDOK BBE NOCARD6,SYSIG1,H	12	02074 M	02128 01257 G
1241	B TYP1 NO	7	02086 J	01120
1242	DCW ACONTROL CARD INFO IS MISSING.G	28	02120	
1243	NOCARD H CARDOK	6	02122 .	02074
1244	*****			
1245	*\$CHECK TEST SWITCHES ROUTINE.			
1246	MRCNG XNRML,1	12	02128 D	09284 00001 D
1247	BNQ ITR1	7	02140 J	08719 Q
1248	B TYP1	7	02147 J	01120
1249	DCW A PRINT CTRL TO NRML2,G	19	02172	
1250	B NORMAL GO TO CLOSED SUBROUTINES	7	02174 J	01732
1251	CW NRMLAA,G1	6	02181 D	02562
1252	SAR 6	7	02187 G	00006 A
1253	B TYP1	7	02194 J	01120
1254	DCW A CHK TST SW CHK:2,G	16	02216	
1255	B TYP1	7	02218 J	01120
1256	DCW A 1.COMP RESET.PRESS A CHK TST SW,a	34	02258	
1257	DC ASRARTa,G	5	02263	
1258	B TYP1	7	02265 J	01120
1259	DCW A 2.CHECK FOR:2,G	14	02285	
1260	B TYP1	7	02287 J	01120
1261	DCW A STOP WITH ALL PROCESS ALARMS ONa,G	35	02328	
1262	B TYP1	7	02330 J	01120
1263	DCW A TYPEOUT:2,G	12	02348	
1264	B TYP1	7	02350 J	01120
1265	DCW A SW.1-E ***SA,G	18	02374	
1266	B TYP1 -----,G	7	02376 J	01120
1267	DCW A	18	02400	
1268	B TYP1 SW.2-E BLANKa,G	7	02402 J	01120
1269	DCW A	18	02426	

PGLIN	LABEL	CT	ADDRS	INSTRUCTION
1238	*****			
1239	*ENSURE THAT CONTROL CARD INFO IS PRESENT.			
1240	CARDOK BBE NOCARD6,SYSIG1,H	12	02074 M	02128 01257 M
1241	B TYP1 NO	7	02086 J	01120
1242	DCW ACONTROL CARD INFO IS MISSING.G	28	02120	
1243	NOCARD H CARDOK	6	02122 .	02074
1244	*****			
1245	*\$CHECK TEST SWITCHES ROUTINE.			
1246	MRCNG XNRML,1	12	02128 D	09284 00001 D
1247	BNQ ITR1	7	02140 J	08719 Q
1248	B TYP1	7	02147 J	01120
1249	DCW A PRINT CTRL TO NRML2,G	19	02172	
1250	B NORMAL GO TO CLOSED SUBROUTINES	7	02174 J	01732
1251	CW NRMLAA,G1	6	02181 D	02562
1252	SAR 6	7	02187 G	00006 A
1253	B TYP1	7	02194 J	01120
1254	DCW A CHK TST SW CHK:2,G	16	02216	
1255	B TYP1	7	02218 J	01120
1256	DCW A 1.COMP RESET.PRESS A CHK TST SW,a	34	02258	
1257	DC ASRARTa,G	5	02263	
1258	B TYP1	7	02265 J	01120
1259	DCW A 2.CHECK FOR:2,G	14	02285	
1260	B TYP1	7	02287 J	01120
1261	DCW A STOP WITH ALL PROCESS ALARMS ONa,G	35	02328	
1262	B TYP1	7	02330 J	01120
1263	DCW A TYPEOUT:2,G	12	02348	
1264	B TYP1	7	02350 J	01120
1265	DCW A SW.1-E ***SA,G	18	02374	
1266	B TYP1 -----,G	7	02376 J	01120
1267	DCW A	18	02400	
1268	B TYP1 SW.2-E BLANKa,G	7	02402 J	01120
1269	DCW A	18	02426	

## PGLIN LABEL OPCODE OPERAND

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1142		ORG	1403			01403
1143						
1144						*****
1144						*\$CLCSED SUBROUTINE TO SET UP FOR RESET-RESTART TYPE OF ROUTINE.
1145	SETUPA	SBR	SETGCES			SET RETURN ADDRESS
1146		MRCWG	X\$IRIA.1			STORE ROUTINE A
1147		B	* E20			
1148	SETUPB	SBR	SETGCES			SET RETURN ADDRESS
1149		MRCWG	X\$TRTB.1			STORE ROUTINE B
1150		B	CKMOCA			GET IN RESET-RESTART MODE
1151	RESTR	B	CKTAC			GO INTERROGATE TADS 0E1E2
1152	SETGC	B	START			RETURN TO PROGRAM
1153						*****
1154						*\$REQUEST RESET-RESTART MODE IF NOT NOW IN RESET-RESTART MODE.
1155	CKMOCA	SBR	CKGGES			
1156		SW	CKSWIT			SET TO SKIP HALT
1157	CKMOCA	BCE	CKNOPW,X\$NODE,R			GO IF IN RESET-RE-START
1158		CW	CKSWIT			SET TO HALT FOR SW.CHANGE
1159		NOPWM				SWITCH TO REQUEST PRINT
1160	CKSWCH	B	CKNEXT			SWITCH SETTING ONLY ONCE
1161		SW	CKSWCH			PER PROGRAM PASS
1162		B	TYP1			
1163		DCW	@ INHIBIT PRINTOUTA,G			
1164	CKNEXT	B	TYP1			
1165		DCW	@ CLK CTRL TO RST-RSRTRIA,G			
1166	CKNOPW	B	ODCFIL			GO READY ANY 1405 PRESENT
1167		NOPWM				
1168	CKSWIT	B	CKGD			GO IF NO SWITCH CHANGES
1169		H				WAIT FOR SWITCH CHANGE

## 1410 ALARM PROGRAM

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PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1171		MLCS	2R2,XMODE	12	01585	D 09305 09203 3
1172		NOPWM		1	01597	N
1173	CKERRS	B	CKGO	7	01598	J 01652
1174		SW	*--12	6	01605	* 01598
1175		B	TYP1	7	01611	J 01120
1176		DCW	@ IF THIS MODE ERR STOPS-ERR 2	28	01645	
1177		DC	RSETER	5	01650	02997
1178		DCW	@MA	1	01651	
1179	CKGO	B	0	7	01652	J 00000
1180	*****		RETURN TO PROGRAM	7	01652	J 00000
1181	*****		*****	7	01659	G 01700 B
1182	ERROR	SBR	ERRA	7	01666	G 01730 B
1183		SBR	ERRCES	12	01673	B 01702 01000 1
1184		BCE	ERRB,TADC,1	7	01685	J 01120
1185		B	TYP1	9	01700	
1186	ERRA	CCW	2ERR @,G	12	01702	B 01725 01002 1
1187	ERRB	BCE	ERRC,TAD2,1	11	01714	A 09304 01730
1188		A	E1,ERRCES	7	01725	J 00000
1189	ERRC	B	0	1190	*****	*****
1191	*****		*****	1191	*****	*****
1192	NORMAL	SBR	SETGC&5	7	01732	G 01467 B
1193		MRCNG	XSTRTC,I	12	01739	D 09176 00001 L
1194		BCE	NORMAA,XGCCDE,N	12	01751	B 01801 09203 N
1195		B	TYP1	7	01763	J 01120
1196		DCW	@ CHK CTRL TO NRM&.6	17	01786	
1197		H	WAIT FOR SWITCH CHANGE	1	01788	
1198		MLCS	@A,XMODE	12	01789	D 09306 09203 3
1199	NORMAA	B	RESTRI	7	01801	J 01455

PCLIN LABEL OPCOD OPERAND

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CT ADDRS INSTRUCTION

1201 \*\*\*\*\*  
12C2 \*\$CLCSEC SUBROUTINE TO PLACE AN INVALID CHARACTER IN LOCATION 00110  
12C3 \*\$OF CCRE MEMORY.  
12C4 CLINVND SBR CLINVAE5 SET RETURN ADDRESS 7 01808 G 01875 B  
12C5 CH CLINVB61 6 01815 D 01835  
12C6 SAR 20 7 01821 G 00020 A  
12C7 CS 12C ATTEMPT TO CLEAR LAST ONE 6 01828 / 00120  
12C8 CLINVNB CH CLINVAE1 6 01834 D 01871  
12C9 SAR 20 7 01840 G 00020 A  
1210 PLCHA @\$.50@,112 STORE EDIT B FIELD 12 01847 D 09310 00112 X  
1211 PCE XEDITA,112 \*\*\*GENERATE INVALID BLANK  
1212 \* IN ADDRESS 0110 11 01859 E 09220 00112  
1213 CLINVA B 0 7 01870 J 00000  
1214 \*\*\*\*\*  
1215 \*CLOSED SUBROUTINE TO CLEAR INVALID CHARACTER AT LOCATION ON 00110  
1216 CLEARC SER CLEARAE5 SET RETURN ADDRESS 7 01877 G 01908 B  
1217 CM CLEARAE1 6 01884 D 01904  
1218 SAR 20 7 01890 G 00020 A  
1219 CS 12C 6 01897 / 00120  
1220 CLEARA B 0 7 01903 J 00000  
1221 NOP 1 01910 N  
1222 \*\*\*\*\*  
1223 \* \*\*\*\*\*  
1224 \* \* PROGRAM STARTS HERE \*  
1225 \* \*\*\*\*\*  
1226 \* \*\*\*\*\*  
1227 ORG 20C0 02000  
1228 START MRCNG XROUTN,30 SET TO RSTRT RTNS AT 30 12 02000 D 09184 00030 D  
1229 B CKTAD GO INTERROGATE TADS 06162 7 02012 J 01010 G  
1230 BAL \*E1 7 02019 R 02026 H  
1231 MLCWS @0CC00@,X1 SET X1 FOR ROUTINE USE 12 02026 D 09315 00029 7  
1232 MCP IDENT TYPE PROGRAM IDENTITY 10 02038 M ZT0 01250 W  
1233 BAI --16 7 02048 R 02038 G  
1234 CS TOPMEM SET UP IN CASE OF 1405 6 02055 / 09899  
1235 CS 1 02061 /  
1236 MLCWS G @MA,1CPMEMC1 GM-WM TO 09900 12 02062 D 09316 09900 7

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1238						
1239	***ENSURE THAT CONTROL CARD INFO IS PRESENT.					
1240	CARDCK	BBF	NOCARDE6,SYSTEL, <sup>G</sup> H	IS CTRL INFO PRESENT	12	02074 W 02128 01257 <sup>G</sup> M
1241		B	TYP1	NO	7	02086 J 01120
1242		DCW	ACCNTROL CARD INFO IS MISSING <sup>a</sup> ,G		28	02120
1243	NOCARD	H	CARDOK		6	02122 . 02074
1244	*****					
1245	***CHECK TEST SWITCHES ROUTINE.					
1246		MRCWG	XNRML,1		12	02128 D 09284 00001 <sup>D</sup> L
1247		BNQ	ITRI		7	02140 J 08719 Q
1248		B	TYP1		7	02147 J 01120
1249		DCW	@ PRINT CTRL TO NRML, <sup>a</sup> G		19	02172
1250		B	NORMAL	GO TO CLOSED SUBROUTINES	7	02174 J 01732
1251		CW	NRMLAAEI		6	02181 □ 02562
1252		SAR	6		7	02187 G 00006 A
1253		B	TYP1		7	02194 J 01120
1254		DCW	2 CHK TST SW CHK, <sup>a</sup> ,G		16	02216
1255		B	TYP1		7	02218 J 01120
1256		DCW	@ 1.COMP RESET,PRESS A CHK TST SW, <sup>a</sup>		34	02258
1257		DC	@START <sup>a</sup> ,G		5	02263
1258		B	TYP1		7	02265 J 01120
1259		DCW	@ 2.CHECK FOR, <sup>a</sup> ,G		14	02285
1260		B	TYP1		7	02287 J 01120
1261		DCW	@ STOP WITH ALL PROCESS ALARMS CNA, <sup>a</sup> ,G		35	02328
1262		B	TYP1		7	02330 J 01120
1263		DCW	@ TYPEOUT, <sup>a</sup> ,G		12	02348
1264		B	TYP1		7	02350 J 01120
1265		DCW	@ SW.1-E ***\$A, <sup>a</sup> ,G		18	02374
1266		B	TYP1		7	02376 J 01120
1267		DCW	@ ----- <sup>a</sup> ,G		18	02400
1268		B	TYP1		7	02402 J 01120
1269		DCW	@ SW.2-E BLANK, <sup>a</sup> ,G		18	02426

1410 ALARM PROGRAM  
OPCODE OPERAND

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PGMLIN	LABEL	CT	ADDRS	INSTRUCTION
1271	B TYP1	7	02428	J 01120
1272	DCW 2 SW.3-E 000020,G	18	02452	
1273	B TYP1	7	02454	J 01120
1274	DCW 2 3.1F WRNG-ERR A	17	02477	
1275	CC NRMLER G	5	02482	02579
1276	DCW 2H2	1	02483	
1277	B TYP1	7	02484	J 01120
1278	DCW 2 4.REPEAT 1-3 FOR 3 CHK TESTSA,G	30	02520	
1279	B TYP1	7	02522	J 01120
1280	DCW 2 FOR NEXT CHK-RESET,START,STARTA,G	31	02559	
1281	MRCWG XNRML,1 SET ROUTINE FOR CHK TST	12	02561	D 09284 00001 L
1282	H NRMLAB WAIT FOR TEST	6	02573	* 02580
1283	NRMLER H ERROR HALT	1	02579	*
1284	*ERRCR HALT-			
1285	* IF A PROCESS ALARM IS NOT ON-			
1286	* -AND ALL FOLLOWING AUTO ROUTINES ARE			
1287	* SUCCESSFUL-PROBABLY AN INDICATOR FAILURE.			
1288	* -AND ONE OF THE FOLLOWING AUTO ROUTINES			
1289	* FAIL-REFER TO AUTO ROUTINE ERROR HALT.-OR			
1290	* STATIC SCOPE POINT-LOGIC 18.14..08.			
1291	* IF E CHARACTER TYPED INCORRECTLY-			
1292	* SCOPE POINT-42.1G,10 2E,11C4H03E			
1293	* IF SYSTEM APPEARS TO BE HUNG IN A LOOP WITH NO			
1294	* ALARMS ON INSTEAD OF STOPPING WITH ALARMS ON-			
1295	* SCOPE POINT-18.14..08 1B,11D2E17A			
1296	BNQ ITR1	7	02580	J 08719 Q
1297	BCE NRPLAA,TAD1,1	12	02587	B 02561 01001 1
1298	CW CKSWCH CLR PRINT INHIBIT SWITCH	6	02599	* 01501
1299	CW CKERS CLR RST-RSTRT ERR PRT SW	6	02605	* 01598

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION	C0222 PAGE 28
1301	*****		1410 ALARM PROGRAM				
1302	*****		\$CHECK THE RESTART PCCE OF THE CHECK CONTROL SWITCH BY				
1303	*****		*\$GENERATING AN ASSEMBLY CHECK ALARM.				
1304	RSTDAA	MRCWIG	XSTIRIA,1	SET UP FCR RESET-RESTART	12	02611 D 09140 00001 L	
1305		CW	RSTART1		6	02623 □ 02745	
1306		SAR	20		7	02629 C 00020 A	
1307		SAR	SETG0ES		7	02636 G 01467 A	
1308		B	CKTAC	GO INTERROGATE TADS 06162	7	02643 J 01010	
1309		BW	RSTABA,CKSKCH		12	02650 V 02687 01501 I	
1310		B	TYP1		7	02662 J 01120	
1311		DCW	♂ IN-16IT PRINTOUT@,G		17	02685	
1312	RSTABA	B	TYP1		7	02687 J 01120	
1313		DCW	♂ CH# CTRL TO RSTR@,G		18	02711	
1314		H	WAIT FCR SWITCH CHANGES		1	02713 *	
1315		SH	CKSKCH	SET INHIBIT SWITCH	6	02714 * 01501	
1316		MLCS	♂E6,XMODE	SET RESTART INDICATOR	12	02720 D 09317 09203 3	
1317		BCE	RSTAIAA,TADC,1		12	02732 B 02785 01000 1	
1318	RESTART	B	TYP1		7	02744 J 01120	
1319		CCW	♂ IF THIS MODE ERR STOPS-ERR @		28	02778	
1320		DC	RSTAER		5	02783 02853	
1321		DCW	G ANG		1	02784	
1322	RSTAIAA	CW	RSTAEST1		6	02785 □ 02855	
1323		SAR	20		7	02791 G 00020 A	
1324	*****		*****				
1325	RSTARP	CS	12C	CLEAR EDIT B FIELD	*	6 02798 / 00120	
1326	*	MLCWA	♂\$..50@,112	STORE EDIT B FIELD	*	12 02804 D 09310 00112 X	
1327	*	MCE	XECITA,112	A- 262,B-\$..50	*	11 02816 E 09220 00112	
1328	*	*	*	THIS EDIT SHOULD CAUSE AN INVALID	*		
1329	*	*	*	BLANK IN ADDRESS 110 DURING SCAN 3,*	*		
1330	*	*	*	THIS CAUSING AN ASSEMBLY CHK ALARM.*	*		
1331	RSTAAD	BNQ	ITRI		7	02827 J 08719 Q	
1332	*	BCE	RSTARP,COMTAC,C TAD011-TAD2-NOT1-		12	02834 B 02798 01119 C	
1333	*	*	*****				

1410 ALARM PROGRAM

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PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1335		B	RSTAND		7	02846 J 02862
1336	RSTAER	H			1	02853 .
1337	*ERRCR-ALARM	STOP OCCURRED WITH CHECK CONTROL SWITCH				
1338	*IN RESTART MODE.					
1339	*STATIC SCCPE POINT-13.42.10 4C.11B3B266				7	02854 J 01659
1340	RSTAST	B	ERROR		1	02861 .
1341		H				
1342	*ERRCR HALT-ASSEMBLY CHECK ALARM,WITH CHECK CONTROL					
1343	*SWITCH IN RESTART MODE.CAUSED RESET-RESTART.					
1344	*PROBABLY OPERATOR ERROR-OR CHECK CONTROL SWITCH IS					
1345	*WIRED WRONG.					
1346	RSTAND	BNQ	ITR1		7	02862 J 08719 Q
1347		BCE	RSTARP,TAD1,1		12	02869 B 02798 01001 1
1348		B	CLEARC		7	02881 J 01877
			CLEAR INVALID CHARACTERS			

## 1410 ALARM PROGRAM

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PGLIN	LABEL	OPCOD	OPÉRAN	CT	ADDRS	INSTRUCTION
1350						
1351			*CHECK THE RESET-RESTART MODE OF THE CHECK CONTROL SWITCH AND THE			
1352			*ASSEMBLY CHECK ALARM CIRCUITRY BY GENERATING AN ASSEMBLY CHECK			
1353	*\$ALARM.					
1354	RSETBB	B	SETUPA	60	TO CLOSED SUBROUTINES	7 02888 J 01403
1355	*					
1356	RSETRP	CW	RSETAA&1	*		6 02895 H 02915
1357	*	SAR	20	*		7 02901 G 00020 A
1358	*	CS	12C	CLEAR EDIT B FIELD	*	6 02908 / 00120
1359	RSETAA	CW	RSETAB&1	*		6 02914 H 02940
1360	*	SAR	20	*		7 02920 G 00020 A
1361	*	MLCWA	2\$..50@,112	STORE EDIT B FIELD	*	12 02927 D 09310 00112 X
1362	RSETAB	CW	RSETND&1	*		6 02939 H 02999
1363	*	SAR	20	*		7 02945 G 00020 A
1364	*	MCE	XECITA,112	GENERATE ASSEMBLY CHK*	*	11 02952 E 09220 00112
1365	*	BNQ	ITRI	*		7 02963 J 08719 Q
1366	*	BCE	RSETRP,COMTAC,C TAD0@1-1,TAD2-NOT1*			12 02970 B 02895 01119 C
1367	*					
1368	B	ERROR	GO TO ERROR ROUTINE			7 02982 J 01659
1369	H					1 02989 *
1370			*ERRCR HALT-ASSEMBLY CHECK ALARM,WITH CHECK CONTROL			
1371			*SWITCH IN RESET-RESTART MODE, CAUSED ONLY RESTART-OR			
1372			*ASSEMBLY CHECK ALARM CIRCUITRY IS FAILING.			
1373			*SCOPE LOOP POINT-18..14..08 4F,11D2D226			
1374	B	RSEIND	GO TO END ROUTINE			7 02990 J 02998
1375	RSETER	H	DUMMY ERROR HALT			1 02997 *
1376			*ERRCR-WHILE THE CHECK CONTROL SWITCH WAS IN RESET-			
1377			*RESTART MODE,A MASTER ERRCR CAUSED AN ALARM STOP.			
1378			*MASTER ERROR IS PROBABLY DUE TO AN ASSEMBLY CHECK			
1379			*ALARM GENERATED BY ABOVE ROUTINE.			
1380			*STATIC SCOPE POINT-13..42..10 1E,11D3H18C			
1381	RSEIND	BNQ	ITRI			7 02998 J 08719 Q
1382	BCE	RSETRP,TADI,1				12 03005 B 02895 01001 1
1383	B	CLEARC	CLEAR INVALID CHARACTERS			7 03017 J 01877

1410 ALARM PROGRAM  
OPCODE OPERAND

CT ADDRS INSTRUCTION

PGLIN	LABEL	CT	ADDRS	INSTRUCTION
1385	*****			
1386	*\$CHECK THE ABILITY OF A CLEAR STORAGE INSTRUCTION TO CLEAR AN			
1387	*INVALID CHARACTER IN CORE WITHOUT CAUSING AN ALARM.			
1388	B SETUPA GO TO CLOSED SUBROUTINES	7	03024	J 01403
1389	*****			
1390	CLSTRP B CLINDE MAKE ADDR 110 INVALID 18.12.03	7	03031	J 01808
1391	* CW CLSTND SET FOR RESET-RESTART 3E-L 5E	6	03038	D 03070
1392	* SAR 20 *	7	03044	G 00020 A
1393	* MLNA XATES,XBAR AAR-BAR STORAGE TO 8S*	12	03051	D 09215 09139 /
1394	* CS 12C ***CLEAR INVALID CHAR. *	6	03063	/ 00120
1395	CLSTST BNQ ITRI *	7	03069	J 08719 Q
1396	* BCE CLSTRP,COMTAD,C TAD0E1-1,TAD2-NOT1*	12	03076	B 03031 01119 C
1397	*****			
1398	C XBAR,28888882 CS OK	11	03088	C 09139 09322
1399	BE CLSTND GO IF YES	7	03099	J 03114 S
1400	B ERROR GO TO ERROR ROUTINE	7	03106	J 01659
1401	H	1	03113	.
1402	*ERRCR HALT-CLEAR STORAGE OF AN INVALID CHARACTER			
1403	* CAUSED A RESET-RESTART			
1404	*SCOPE LOGIC POINT-18.12.03 3E,11D2B22L			
1405	CLSTND BNQ ITRI	7	03114	J 08719 Q
1406	BCE CLSTRP,IADI,1	12	03121	B 03031 01001 1

PGLIN LABEL CPCOD OPERAND

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CT ADDRS INSTRUCTION

14C8 \*\*\*\*\*  
14C9 \*\$CHECK IC INTERLOCK CHECK WITH 3 TYPE OP CODE ON E CHANNEL.  
1410 B SETUPA GO TO CLCSED SUB ROUTINES  
1411 CW IOECST1 SET FOR RESET-RESTART  
1412 SAR 20  
1413 \* \*\*\*\*\*  
1414 IGECRP RCP XSPACE SET E CHANNEL INTRLK \* 18.14.08  
1415 \* MLNA XATES,XBAR AAR-BAR STORAGE TO 85\* 4E  
1416 IOECAR RCP XSPACE \*\*\*CAUSE 10 INTRUK CHECK\* 18.14.11  
1417 IOECST BAI \*61 \* 3D 4D 5E  
1418 \* BNQ ITR1 \*  
1419 \* BCE IOECRP,CONTAD,C TAD051-1,TAD2-NOT1\* 7 03192 J 08719 Q  
1420 \* \*\*\*\*\*  
1421 IOECAA C XAAR,XUPRSA CORRECT RST-RSTRT OCCURR  
1422 BE IOECND GO IF YES  
1423 IOECAB B ERROR GO TO ERROR ROUTINE  
1424 H  
1425 \*ERRRCR T-ALT-10 INTERLOCK ALARM DID NOT CAUSE CORRECT  
1426 \*RESET RESTART  
1427 \*SCOPE LCCP POINT-18.14.08 4E,11D2C21E  
1428 IOECND BNQ ITR1  
1429 BCE IOECRP,TAD1,1

1410 ALARM PROGRAM  
OPCODE OPERAND

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C022 PAGE 33

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
*****						
1431						
1432	*S	CHECK IO INTERLOCK CHECK WITH 2 CHAR E CHANNEL OP CODE.				
1433	IOETCH	B	SETUPA	7	03256	J 01403
1434		CW	IOETST1	6	03263	D 03293
1435		SAR	20	7	03269	G 00020 A
1436	*					
1437	IOETRP	SSF	0	18.14.11	2	03276 K C
1438	*	PLNA	XATES,XBAR	AAR-BAR STORAGE TO 8S*	4D 5D	12 03278 D 09215 09139 /
1439	ICETAR	SSF	0	***SSF-10 INTERLOCK ALRM*	2	03290 K O
1440	IOETST	BA1	*E1		7	03292 R 03299 H
1441	*	BNQ	ITRI	*	7	03299 J 08719 Q
1442	*	BCE	IOETRP,COMIAC,C	TAD061-1,TAD2-NOT1*	12	03306 B 03276 01119 C
1443	*					
1444	IOETAA	C	XAAR,XOPRSA	CORRECT RST-RSTRT OCCUR	11	03318 C 09134 09233
1445		6E	IOETND	GO IF YES	7	03329 J 03344 S
1446	IOETAB	B	ERROR	GO TO ERROR ROUTINE	7	03336 J 01659
1447		H			1	03343 .
1448						
1449						
1450						
1451						
1452						

1410 ALARM PROGRAM  
OPCODE OPERAND

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PGLIN LABEL ADDR INSTRUCTION

```

1454 *$CHECK IC INTERLOCK CHECK WITH □ TYPE OP CODE ON F CHANNEL IF
1455 *$SYSTEM HAS 2ND CHANNEL.
1456     BCE    IOFLNDE19, SYS1E13. SKIP RIN-NO CHN 2
1457     B      SETUPA   GO TO CLOSED SUBROUTINES
1458     C      IOFLST1  SET FOR RESET RESTART
1459     CH     SAR    20
1460
1461 *
1462     IOFRP   DCW    2LET0@  RCP CHANNEL 2 OP CODE* 18.14.11  4 03395
1463     *      DC     XSPACE  TO SET IO INTERLOCK * 4D-G 5F  5 03403 09204
1464     *      DC     @RA
1465     *      MLNA   XATES,XBAR  AAR-BAR STORAGE TO BS*  *
1466     IOFAR   DCW    2LET0@  RCP CHANNEL 2 OP CODE*
1467     *      DC     XSPACE  ***CAUSE IO INTRLK ALARM*  *
1468     *      DC     @RA
1469     IOFLST  BA2    •61
1470     *      BNC    ITR1
1471     *      BCE    IOFRP,COMTAD,C TAD0E1-1,TAD2-NOT 1*
1472     *
1473     IOFLAA  C      XAAR,XOPRSA  CORRECT RST-RSTRT OCCUR 11 03453  C 09134 09233
1474     BE    IOFLND  GO IF YES  7 03464  J 03479 S
1475     IOFLAB  B      ERROR   GO TO ERROR ROUTINE  7 03471  J 01659
1476     H
1477     *ERRCR HALT-TWO SUCCESSIVE □ TYPE F CHANNEL OP CODES
1478     *FAIL TO CAUSE AN IO INTERLOCK ALARM.
1479     *SCOPE LOOP POINT-18.14.11 4C,11D2C05C
1480     IOFLND  BNQ    ITR1
1481     BCE    IOFRP,TAD1,1

```

```

1483
1484 *CHECK 10 INTERLOCK CHECK WITH 2 CHAR F CHANNEL OP CODE IF SYSTEM
1485 *HAS READER ON SECOND CHANNEL.
1486 BCE IOFTNDE19,CHN2E12, SKP IF NO F RDR
1487 IOFTCH 8 SETUPA GO TO CLOSED SUBROUTINES
1488 IOFISI11 SETI FOR RESET-RESTART
1489 SAR 20
1490
* *****
1491 IOFTRP DCW 342 CHANNEL 2 SELECT *
1492 * CC 204 STACKER & FEED OP *
1493 * PLNA XATES,XBAR AAR-BAR STORAGE TO 8S*
1494 IOFIAR DCW 346 ***SSF-10 INTRLK ALARM *
1495 * CC 204 *
1496 IOFTST BAI #E1 *
1497 * BNQ ITR1 *
1498 * BCE IOFTP,COMTAD,C TADCE1-1,TAD2-NOT1*
1499
* *****
1500 IOFIAA C XAAR,XOPRSA CORRECT REST-RESTRT OCCUR
1501 BE IOFIND GO IF YES
1502 B ERROR GO TO ERROR ROUTINE
1503 H
1504 *ERROR HALT-TWO SUCCESSIVE 2 CHARACTER F CHANNEL OP
1505 *CCDES FAIL TO CAUSE AN 10 INTERLOCK ALARM.
1506 *SCOPE LCOP POINT-LOGIC 24.01.03 4F,11F6C266
1507 IOFTND BNQ ITR1
1508 BCE IOFTP,TAD1,1

```

1410 ALARM PROGRAM  
OPCODE OPERAND

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CT ADDRS INSTRUCTION

\*\*\*\*\*  
1510 \*S CHECK THE ABILITY OF THE ADDRESS CHANNEL CHECK ALARM TO CAUSE A  
1511 \*MASTER ERROR.  
1512 ACPEAA B SETUPA GO TO CLOSED SUBROUTINES  
1513 MLCHS @N@,8 NOP SBR INSTRUCTION  
1514 CW ACMESET1 SET FOR RESET-RESTART  
1515 SAR 20  
1516 \* \*\*\*\*\*  
1517 ACMERP MLNA XATES,XBAR AAR-BAR STORAGE TO BS\* 18.14.08  
1518 SCNL5 \*\*\*CAUSE ADDR CHNL CHECK\* 4H-R  
1519 DC 2000 0 2 WITH BLANK IN B ADDR \*  
1520 ACPEST BNQ ITR1 \*  
1521 BCE ACMERP,COMTAC,C TADOC1-1,TAD2-NDT1\*  
1522 \* \*\*\*\*\*  
1523 C XAAR,20CC05@ CORRECT RST-RSTRY OCCUR  
1524 BE ACMEND GO IF YES  
1525 ACMEER B ERROR GO TO ERROR ROUTINE  
1526 H  
1527 \*ERRCR HALT-ADDRESS CHANNEL CHECK ALARM DID NOT CAUSE  
1528 \*A RESET RESTART.  
1529 \*SCOPE LOOP POINT-18.14.08 4H,11D2C21D  
1530 ACMEND BNQ ITR1  
1531 BCE ACMERP,TADI,1  
1532

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PGLIN LABEL OPCODE OPERAND  
 \*410 ALARM PROGRAM

CT ADDRS INSTRUCTION

```

1534      *$CHECK ADDRESS CHECK ALARM CIRCUITRY BY GENERATING AN ADDRESS WRAP
1535      *$AROUND LOW.
1536      8      SETUPA      GO TO CLOSED SUBROUTINES
1537      0      0      PATCHA      PATCH AT END * BYPASS ROUTINE *
1538      0      DCW      3N      3      FILL IN * IF LOOK SYSTEM *
1539      0      DCW      3N      3      * ADDRESS POINTERS = 18.14.08
1540      *      MLNA      XATES,XBAR      AAR-BAR STORAGE TO BS* 41-F
1541      *      SCNL5     2+2      SET AAR-BAR TO 00001 *
1542      *      SCNL5     1+0      ***CAUSE ADDRESS CHECK * 18.14.11
1543      *      BNQ      ITRI
1544      ADRCST    BNQ      ITRI
1545      *      BCE      ADRCRP,COM1AD,C TAD0C1-1,TAD2-NOT1* 4B 58 4C
1546      *      BCE      5C 5G
1547      C      XBAR,399996  CORRECT RST-RSTRT OCCUR
1548      BE      ADRCND    GO IF YES
1549      B      ERROR      GO TO ERROR ROUTINE
1550      .H
1551      *ERROR HALT-WRAP AROUND LOW FAILED TO CAUSE AN ADDRESS
1552      *CHECK ALARM.
1553      *SCOPE LOOP POINT-18.14.08 41.1102C21C
1554      ADRCND    BNQ      ITRI
1555      BCE      ADRCRP,TADI,1

```

1410 ALARM PROGRAM  
OPCODE OPERAND

CY ADDRS INSTRUCTION

PCIN	LABEL	OPCODE	OPERAND	CY	ADDRS	INSTRUCTION
1557						
1558	**CHECK ADDRESS CHECK ALARM CIRCUITRY BY GENERATING AN ADDRESS WRAP					
1559	*ROUND HIGH.					
1560		B	SETUPA		7	03857 J 01403
		CW	ADCHST1		6	03864 B 03914
1561		SAR	20		7	03870 G 00020 A
1562		MLCS	SYSL1.ADCHCK6 SET MEMORY SIZE		12	03877 D 01257 03907 3
1563						
1564	*					
	ADCHR P	MLNA	XATES,XBAR A 11-BAR STORAGE TO 05*	1B61C OR	12	03889 D 09215 09139 /
1565	ADCHCK	SCNR	ADCHST,09999 ***CAUSE ADDR CHECK *	1D OR 1F	12	03901 D 03913 09999 8
1566	ADCHST	BNQ	ITRI	*	7	03913 J 08719 Q
1567		BCE	ADCHR P,CDHTAD,C TAD01-1,TAD2-NOT1* LH 58 4C		12	03920 B 03889 01119 C
1568						
1569	*					
1570		C	XBAR,300006 CORRECT RST-RSTR OCCUR		11	03932 C 09139 09335
		BE	ADCHND	GO IF YES	7	03943 J 03958 S
1571		B	ERROR	GO TO ERROR ROUTINE	7	03950 J 01659
1572		H			1	03957 *
1573						
1574	*					
1575	*					
1576	**SCOPE 100P POINT-18.14.11 48.1102K14K				7	03958 J 08719 Q
1577	ADCHND	BNQ	ITRI		12	03965 B 03889 01001 1
1578		BCE	ADCHR P,TAD1,1			

## 1410 ALARM PROGRAM

CPCOD OPERAND

PGLIN LABEL CT ADDRS INSTRUCTION

```

***** *$CHECK ADDRESS CHECK ALARM CIRCUITRY BY HAVING AN A BIT IN THE
1580 *$UNITS POSITION OF THE B ADDRESS.*110 TIME*.
1581
1582
1583     B      SETUPA    GO TO CLOSED SUBROUTINES
1584     MLCWS  2N@,B   NOP SBR INSTRUCTION
1585     CH     ADCAS1   SET FOR RESET-RESTART
1586     SAR    20      *
***** 18.14.11
1587
1588     MLNA   XATES,XBAR  AAR BAR STORAGE TO 8S*
1589     *      SCNL5    ***CAUSE ADDRESS CHECK *
1590     *      DC      20005* 2  WITH A BIT AT I/O TIME*
1591     ADCAST  BNQ     ITRI
1592     *      BCE     ADCARP,COMIAD,C TADCC1-1,TAD2-NOT1*
1593     *      ***** 15.50.05  ***** 21
1594     C      XAAR,20005@  CORRECT RST-RSTRT OCCUR
1595     BE     ADCAND  GO IF YES
1596     B      ERROR   GO TO ERROR ROUTINE
1597     H
1598     *ERROR HALT-AN A BIT IN THE UNITS POSITION OF THE B
1599     *ADDRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.
1600     *SCOPE LOOP POINT-18.14.11 1B,11D2K15D
1601     ADCAND  BNQ     ITRI
1602     BCE     ADCARP,TAD1.1

```

1410 ALARM PROGRAM  
OPCODE OPERAND

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CT ADDRS INSTRUCTION

\*\*\*\*\*  
1604 \*\$CHECK ADDRESS CHECK ALARM WITH A B BIT IN THE THOUSANDS POSITION  
1605 \*\$SCF THE B ADDRESS.\*17 TIME\*.  
1606 ADCBRP MLNA XATES,XBAR AAR-BAR STORAGE TO 8\$\* 15.50.05 12 04129 0 09215 09139 /  
1607 B SETUPA GO TO CLOSED SUBROUTINES 7 04097 J 01403  
MLCWS @NG,8 NOP THE SBR INSTRUCTION 12 04104 D 09306 00008 7  
1608 CW ADCBSTR1 SET FOR RESET-RESTART 6 04116 □ 04154  
1609 SAR 20 7 04122 6 00020 A  
\*\*\*\*\*  
1611 \* ADCBRP MLNA XATES,XBAR AAR-BAR STORAGE TO 8\$\* 15.50.05 12 04129 0 09215 09139 /  
1612 ADCBST SCNL5 \*\*\*CAUSE ADDRESS CHECK \* 21 6 04141 0 00005  
1613 \* DC @0.CC5 @ WITH B BIT AT 17 TIME\* 11.20.09 6 04152  
1614 ADCBST BNQ ITR1 \* 2B-H 7 04153 J 08719 Q  
1615 \* BCE ADCBRP,COMTAC,C TADCE1-1,TAD2-NOT1\* 12 04160 B 04129 01119 C  
1616 \* \*\*\*\*\*  
1617 C XAAR,ACC05@ CORRECT RST-RSTRT OCCUR 11 04172 C 09134 09327  
1618 BE ADCBND GO IF YES 7 04183 J 04198 S  
1619 B ERROR GO TO ERROR ROUTINE 7 04190 J 01659  
1620 H 1 04197 .  
1621 \*\*\*\*\*  
1622 \*ERRCR HALT-THE B BIT IN THE THOUSANDS POSITION OF THE  
1623 \*B ADDRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.  
1624 \*SCOPE LCCP POINT1-18.14.11 18,11D2K15P  
1625 ADCBND BNQ ITR1 7 04198 J 08719 Q  
1626 BCE ADCBRP,TADI,1 12 04205 B 04129 01001 1

PGLIN LABEL OPCOD OPERAND

C022 CT ADDRS INSTRUCTION PAGE 41

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1628		*****	*****			
1629		*****	*****			
1630		*****	*****			
1631		*****	*****			
1632		*****	*****			
1633		*****	*****			
1634		*****	*****			
1635		*****	*****			
1636	ADCCRP	MLNA XATES,XBAR	AAR-BAR STORAGE TO 8.S*	11.20.09	12	04249 D 09215 09139 /
1637	*	SCNLS 5	***CAUSE ADDRESS CHECK *	2C-B	6	04261 D 00005
1638	*	DC 2MCC05 2	WITH ZONE BITS AT 16 *		6	04272
1639	ADCCST	BNQ ITRI			7	04273 J 08719 Q
1640	*	BCE ADCCRP,COMTA0,C TAD0E1-1,TAD2-NOT1-			12	04280 B 04249 01119 C
1641	*	*****	*****			
1642		C XAAR,ACCC05&	CORRECT RST-RSTRT OCCUR		11	04292 C 09134 09327
1643	BE	ADCCND	GO IF YES		7	04303 J 04318 S
1644	B	ERROR	GO TO ERROR ROUTINE		7	04310 J 01659
1645	H				1	04317 *
1646		*****	*****			
1647		*****	*****			
1648		*****	*****			
1649	ADCCND	BNQ ITRI			7	04318 J 08719 Q
1650	BCE	ADCCRP,TADI,1			12	04325 B 04249 01001 1

1410 ALARM PROGRAM  
OPCODE OPERAND

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CT ADDRS INSTRUCTION

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1652						*****
1653			**CHECK THE ADDRESS CHECK ALARM WITH ZCNE BITS IN THE UNITS			
1654			*POSITION OF THE A ADDRESS.*15 TIME*.			
1655		B	SETUPA	7	04337	J 01403
1656		PLCWIS	AN&1	12	04344	D 09306 00001 7
1657		CW	ADCDST1	6	04356	D 04400
1658		SAR	20	7	04362	G 00020 A
1659	*	ADCDRP	MLNA XATES,XBAR	AAR-BAR STORAGE TO BS*	11.20.09	12 04369 D 09215 09139 /
1660	*	SCNL5	1,e	SET BAR TO 5,MOD BLNK*	2B-L	12 04381 D 00001 00006
1661	*	SCNL5		***CAUSE ADDRESS CHECK *		1 04393 D
1662	*	CC	20CC5R&	WITH ZONE BITS AT 15 *		5 04398
1663	*	ADCDST	BNQ	ITR1		7 04399 J 08719 Q
1664	*	BCE	ADCDRP,COMTAD,C	TAD0E1-1,TAD2-NOT1*		12 04406 B 04369 01119 C
1665	*	XBAR,ACC0052	CORRECT RST-RSTRI OCCUR			11 04418 C 09139 09327
1666	*	BE	ADCDND	GO IF YES		7 04429 J 04444 S
1667		B	ERROR	GO TO ERROR ROUTINE		7 04436 J 01659
1668		H				1 04443 *
1669						
1670						
1671						
1672						
1673						
1674		ADCDNC	BNQ	ITR1		7 04444 J 08719 Q
1675		BCE	ADCDRP,TADI,1			12 04451 B 04369 01001 1

\*\*\*\*\*  
 \*ERRCR HALT-ZONE BITS IN THE UNITS POSITION OF THE A  
 \*ADDRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.  
 \*SCOPE LOOP POINT-11.20.09 28,11C1J18G

1410 ALARM PROGRAM  
OPCODE OPERAND

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CT ADDRS INSTRUCTION

PGM	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1677	*****					
1678	***CHECK THE ADDRESS CHECK ALARM WITH ZONE BITS IN THE THOUSANDS					
1679	**POSITION OF THE ADDRESS. *12 TIME*.					
1680	B   SETUPA			7	04463	J 01403
1681	MLCWS  &NA,1			12	04470	D 09306 00001 7
1682	CW   ADCEST1			6	04482	A 04526
1683	SAR   20			7	04488	C 00020 A
1684	*****					
1685	ADCERP  MLNA  XATES,XBAR		AAR-BAR STORAGE TO 8*	11.20.09	12	04495 D 09215 09139 /
1686	SCNLS  1,6		SET BAR TO 5,MOD BLNK* 2B-K		12	04507 D 00001 00006
1687	SCNLS  G		***CAUSE ADDRESS CHECK *		1	04519 D
1688	CC  20FC052		WITH ZONE BITS AT I2 *		5	04524
1689	ADCEST  BNQ   ITRI				7	04525 J 08719 Q
1690	BCE  ADCERP,COMTAC,C TAD0E1-1,TAD2-NOT1*				12	04532 8 04495 01119 C
1691	*****					
1692	C  XBAR,0C00052		CORRECT RST-RSTRT OCCUR		11	04544 C 09139 09327
1693	BE   ADCEND		GO IF YES		7	04555 J 04570 S
1694	B   ERROR		GO TO ERROR ROUTINE		7	04562 J 01659
1695	H				1	04569 -
1696	*****					
1697	*ERRCR HALT-ZONE BITS IN THE THOUSANDS POSITION OF THE *A ADDRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.					
1698	*SCOPE LCCP POINT-11.20.C9 2B, INCLUDING				7	04570 J 08719 Q
1699	ADCEND  BNQ   ITRI				12	04577 B 04495 01001 1
1700	BCE  ADCERP,TADI,1					

1410 ALARM PROGRAM  
OPCODE OPERAND

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CT ADDRS INSTRUCTION

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
17C2	*****					
17C3	*****					
17C4	*****					
17C5	*****					
17C6	*****					
17C7	*****					
17C8	*****					
17C9	*****					
1710	ADCFRP	MLNA XATES,XBAR	AAR-BAR STORAGE TO 85*	11.20.09	12	04621 D 09215 09139 /
1711	*	SCNLNS 1,6	SET BAR TO 5,MOD BLNK*	2C-F	12	04633 D 00001 00006
1712	*	SCNLNS Q	***CAUSE ADDRESS CHECK *		1	04645 D
1713	*	DC 2MCO05a	WITH ZONE BITS AT 11 *		5	04650
1714	ADCFSST	BNQ ITRI			7	04651 J 08719 Q
1715	*	BCE ADCFRP,COMTAD,C TAD0E1-1,TAD2-NOT1*			12	04658 B 04621 01119 C
1716	*	*****				
1717	C	XBAR,2C00005a	CORRECT RST-RSTRY OCCUR		11	04670 C 09139 09327
1718	BE	ADCFND	GO IF YES		7	04681 J 04696 S
1719	B	ERROR	GO TO ERROR ROUTINE		7	04688 J 01659
1720	H				1	04695 .
1721	*****					
1722	*****					
1723	*****					
1724	ADCFND	BNQ ITRI			7	04696 J 08719 Q
1725	BCE	ADCFRP,TAD1,1			12	04703 B 04621 01001 1

1410 ALARM PRCGRAP  
OPCODE OPERAND

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CT ADDRS INSTRUCTION

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1727		***** *SCHECK INSTRUCTION CHECK ALARM CIRCUITRY VIA A BIT IN D MODIFIER				
1728		*\$OF TABLE LOOKUP.				
1729		*****				
1730		B	SETUPA	GO TO CLOSED SUBROUTINES		
1731		CW	ITBAST1	SET FOR RESET-RESTART		
1732		SAR	20			
1733	*	***** *SCHECK INSTRUCTION CHECK ALARM CIRCUITRY VIA A BIT IN D MODIFIER				
1734	ITBARP	MLNA	XATES,XBAR	AAR-BAR STORAGE TO 85*	12	04735 D 09215 09139 /
1735	*	DCW	@1a	***CAUSE INSTRUCTION CHK*	1	04747
1736	*	DC	XTBLA	* 18.14.11	5	04752 09234
1737	*	DC	XTBLB	*	5	04757 09235
1738	*	DC	@XA	* 12.12.43	1	04758
1739	ITBAST	BNQ	ITRI	* 1G 3G 4G	7	04759 J 08719 Q
1740	*	BCE	ITBARP,COMTAC,C	TAD0E1-1,TAD2-NOT1*	12	04766 B 04735 01119 C
1741	*	*****				
1742		C	XBAR,EXTBLB	CORRECTI RST-RSTRT OCCUR	11	04778 C 09139 09340
1743		BE	ITBAND	GO IF YES	7	04789 J 04804 S
1744		B	ERROR	GO TO ERROR ROUTINE	7	04796 J 01659
1745		H			1	04803 *
1746		*ERRCR HALT-A TABLE LOOKUP INSTRUCTION WITH AN X D				
1747		*MODIFIER FAILED TO CAUSE AN INSTRUCTION CHECK.				
1748		*SCOPE LOOP POINT1-18.14.08 4E,11D2C21E				
1749	ITBAND	BNQ	ITRI		7	04804 J 08719 Q
1750	BCE	ITBARP,TADI,1			12	04811 B 04735 01001 1

1410 ALARM PROGRAM  
OPCODE OPERAND

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CT ADDRS INSTRUCTION

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
***** *CHECK INSTRUCTION CHECK ALARM CIRCUITRY VIA B BIT IN D MODIFIER						
1752	*SCF TABLE LCOUP.					
1753						
1754						
1755	B	SETUPA		7	04823 J 01403	GO TO CLOSED SUBROUTINES
1756	CW	ITBBS1		6	04830 □ 04868	SET FOR RESET-RESTART
1757	SAR	20		7	04836 G 00020 A	
1758						
1759	ITEBRP	MLNA	XATES,XBAR			AAR-BAR STORAGE TO 8\$* 12-12-43
1760	*	DCW	AT&*			***CAUSE INSTRUCTION CHK* 4G-R
1761	*	DC	XTELA			*
1762	*	DC	XTBLB			*
1763	*	DC	APS			*
1764	ITB8ST	BNQ	ITR1			*
1765	*	BCE	ITEBRP,COMIAD,C			TAD0E1-L,TAD2-NOT1*
1766	*					
1767	C	XBAR,EXTBLE	CORRECT RST-RSTART OCCUR			
1768	BE	ITBBND	GO IF YES			
1769	B	ERROR	GO TO ERROR ROUTINE			
1770	H					1 04911 *
1771						*****
1772						*ERRCR HALT-A TABLE LOOKUP INSTRUCTION, WITH A P FOR
1773						*THE D MODIFIER, FAILED TO CAUSE AN INSTRUCTION CHECK.
1774	ITBBND	BNQ	ITR1			*SCOPE LCOP POINT-12-12-43 4G,LLJICIA06D
1775	BCE	ITEBRP,TADI,1				
						7 04912 J 08719 Q
						12 04919 B 04843 01001 1

1410 ALARM PROGRAM  
OPCODE OPERAND

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PGLIN LABEL ADDR INSTRUCTION

PGLIN	LABEL	OPCODE	OPERAND	C	T	ADDRS	INSTRUCTION	
1777		***** **CHECK INSTRUCTION CHECK ALARM CIRCUITRY VIA AN 8 BIT IN THE D **SPECIFIER OF OF TABLE LOOKUP.						
1778								
1779								
1780	B	SETUPA	GO TO CLOSED SUBROUTINES	7	04931	J	01403	
1781	CW	ITECST1	SET FOR RESET-RESTART	6	04938	D	04976	
1782	SAR	20		7	04944	G	00020 A	
1783	*	*****						
1784	1TBCRP	MLNA	XATES,XBAR	AAR-BAR STORAGE TO 8\$*	12	04951	D	09215 09139 /
1785	*	DCW	8T\$	***CAUSE INSTRUCTION CHK*	4G-P	1	04963	
1786	*	DC	XIBLA	*		5	04968	09234
1787	*	DC	XIELB	*		5	04973	09235
1788	*	DC	8Ma	*		1	04974	
1789	1TBCST	BNQ	ITRI	*		7	04975	J 08719 Q
1790	*	BCE	ITECRP,CCM1AC,C	TADCE1-1,TAD2-NOT1*		12	04982	B 04951 01119 C
1791	*	*****						
1792	C	XBAR,EXTBLB	CORRECT RST-RESTR OCCUR	11	04994	C	09139 09340	
1793	BE	1TBCND	GO IF YES	7	05005	J	05020 S	
1794	B	ERROR	GO TO ERROR ROUTINE	7	05012	J	01659	
1795	H			1	05019	*		
1796		***** ERRCR HALT-A TABLE LOOKUP INSTRUCTION,WITH A FOR						
1797		**THE D MCCIFIER, FAILED TO CAUSE AN INSTRUCTION CHECK.						
1798		**SCOPE LCCP POINT-12-12-43 4G.11C1A06D						
1799	1TBCND	BNQ	ITRI	7	05020	J	08719 Q	
1800	BCE	ITECRP,TAD1,1		12	05027	B	04951 01001 1	

PGLIN	LABEL	OPCODE	OPERAND	INSTRUCTION
18C2	*****			*****
18C3	**CHECK INSTRUCTION CHECK ALARM DUE TO OVERLAPPED SCAN OPERATION			
18C4	**SCN THE 1311 IF A 1311 AND OVERLAP IS AVAILABLE ON CHANNEL ONE.			
18C5	BCE	IFILEAA,CHN1E22,R	GO IF IMPAC PRESENT	12 05039 B 05058 01311 R
18C6	B	IFLEND19	SKIP ROUTINE	7 05051 J 05312
18C7	IFILEAA	BCE	IFILEAB,SYSLC7,1 GO IF OVERLAP PRESENT	12 05058 B 05077 01263 1
18C8	B	IFLENDC19	SKIP ROUTINE	7 05070 J 05312
18C9	IFILEAB	BCE	IFILEAC,CHN1E25,1 GO IF SCAN FEATURE	12 05077 B 05096 01314 1
1810	B	IFLEND19	SKIP ROUTINE	7 05089 J 05312
1811	IFILEAC	B	SETUPA GO TO CLOSED SUBROUTINES	7 05096 J 01403
1812	CW	IFILESTC1	SET FOR RESET-RESTART	6 05103 □ 05208
1813	SAR	20		7 05109 G 00020 A
1814	MLCWS	2N6,8	NOP SBR INSTRUCTION	12 05116 D 09306 00008 7
1815	IFLEAD	MLCS	206,XIFLA SET DRIVE SELECT TO 0	12 05128 D 09341 09271 3
1816	*	*****	*****	*****
1817	IFLERP	MNNA XATES,XBAR	AAR-BAR STORAGE TO 8\$* 13.74.05	12 05140 D 09215 09139 /
1818	*	SC 1.XIFLA	SEEK * 3A 4A	10 05152 H 2F0 09271 R
1819	*	BCB1 *-16		7 05162 R 05152 2
1820	*	BNR1 CHDRIV	THIS DRIVE NOT READY *	7 05169 R 08788 1
1821	*	BA1 *61		7 05176 R 05183 H
1822	IFILEZX	MU 2F7,XIFLA,H ***CAUSE INSTRUCT CHK *		10 05183 M 2F7 09271 H
1823	*	BCB1 *-16		7 05193 R 05183 2
1824	*	BNR1 IFLEER	ERROR-NOT READY *	7 05200 R 05266 1
1825	IFLEST	BA1 *61		7 05207 R 05214 H
1826	*	BNQ ITR1		7 05214 J 08719 Q
1827	*	BCE IFLERP,COMTA,D,C TADC61-1,TAD2-NOT1*		12 05221 B 05140 01119 C
1828	*	*****	*****	*****
1829	C	XAAR,CFILEZX	CORRECT RST-RSTRT OCCUR	11 05233 C 09134 09346
1830	BE	IFLEND	GO IF YES	7 05244 J 05293 S
1831	B	ERRCR	GO TO ERROR ROUTINE	7 05251 J 01659
1832	H		ERROR HALT	1 05258 *
1833	*	ERRCR HALT-AN OVERLAPPED CHAN ONE SCAN INSTRUCTION ON		
1834	*	YOUR 1311 FAILED TO CAUSE AN INSTRUCTION CHECK ALARM.		
1835	*	SCOPE LOOP POINT-13.74-05 3A,1ID2E21C		
1836	B	IFLEND	GO END ROUTINE	7 05259 J 05293

1410 ALARM PROGRAM  
PGLIN LABEL OPCOD OPERAND

PGLIN	LABEL	OPCOD	OPERAND	C1	ADDRS	INSTRUCTION
1838	IFLER	B	ERROR	7	05266	J 01659
1839		H		1	05273	.
1840	*ERRCR HALT-OPERATOR ERROR-NC 1311 DRIVE IS READY ON					
1841	*CHANNEL CNE-SKIPPING THIS ROUTINE THIS PASS.					
1842		BNQ	I1R1	7	05274	J 08719 Q
1843		BCE	IFLEAD,TAD1,1	12	05281	B 05128 01001 1
1844	IFLEND	BNQ	I1R1	7	05293	J 08719 Q
1845		BCE	IFLERP,TAD1,1	12	05300	B 05140 01001 1
1846	*****					
1847	*CHECK INSTRUCTION CHECK ALARM DUE TO OVERLAPPED SCAN OPERATION					
1848	*SON THE 1311 IF A 1311 AND OVERLAP IS AVAILABLE ON CHANNEL TWO.					
1849		BCE	IFLFAA,CHN2&22,R	7	05312	B 05331 01368 R
1850		B	IFLFNDE19	7	05324	J 05585
1851	IFLFAA	BCE	IFLFAB,SY\$167,1	12	05331	B 05350 01263 1
1852		B	IFLFNDE19	7	05343	J 05585
1853	IFLFAB	BCE	IFLFAC,CHN2&25,1	12	05350	B 05369 01371 1
1854		B	IFLFNDE19	7	05362	J 05585
1855	IFLFAC	B	SETUPA	7	05369	J 01403
	GO TO CLOSED SUBROUTINES					

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDR	INSTRUCTION
1857		CW	IIFLST1		6	05376 □ 05481
1858		SAR	20		7	05382 G 00020 A
1859	IIFLFA1	MLCWS	2NG,8		12	05389 D 09306 00008 7
1860		PLCS	20G,XIFLA		12	05401 D 09341 09271 3
1861	*	*****	SET FOR RESET-RESTART		12	05413 D 09215 09139 /
1862	IIFLFRP	MLNA	XATES,XBAR		10	05425 M BFO 09271 R
1863	*	SC	2,XIFLA		7	05435 X 05425 2
1864	*	BCB2	*-16		7	05442 X 08788 1
1865	*	BNR2	CHCRIV		7	05449 X 05456 M
1866	*	BA2	*E1		10	05456 M *F7 09271 W
1867	IIFLFZX	MU	*F7,XIFLA,h		7	05466 X 05456 2
1868	*	BCB2	*-16		7	05473 X 05539 1
1869	*	BNR2	IIFLFER		7	05480 X 05487 M
1870	IIFLST	BA2	*E1		7	05487 J 08719 Q
1871	*	BNQ	IIR1		12	05494 B 05413 01119 C
1872	*	BCE	IIFLFRP,COMTA0,C			
1873	*	C	XAAR,*IIFLFZX		11	05506 C 09134 09351
1874		BE	IIFLFD		7	05517 J 05566 S
1875		B	ERROR		7	05524 J 01659
1876		H			1	05531 .
1877		*****	ERRCR HALT-AN OVERLAPPED CHAN TWO SCAN INSTRUCTION ON			
1878		*****	YCUR 1311 FAILED TO CAUSE AN INSTRUCTION CHECK ALARM.			
1879		*****	SCOPE LOOP POINT-13.74.05 3A,11D2E21C			
1880		B	IIFLFD		7	05532 J 05566
1881		IIFLFER	GO END ROUTINE		7	05539 J 01659
1882		B	ERROR		1	05546 .
1883		H	ERROR HALT			
1884		*****	ERRCR HALT-OPERATOR ERROR-NO 1311 DRIVE IS READY ON			
1885		*****	CHANNEL TWO-SKIPPING THIS ROUTINE THIS PASS.			
1886		BNQ	IIR1		7	05547 J 08719 Q
1887		BCE	IIFLFAD,TADI,1		12	05554 B 05401 01001 1
1888	IIFLFD	BNQ	IIR1		7	05566 J 08719 Q
1889		BCE	IIFLFRP,TADI,1		12	05573 B 05413 01001 1

1410 ALARM PROGRAM  
PGIN LABEL OPCODE OPERAND

C022 PAGE 51  
CT ADDRS INSTRUCTION

\*\*\*\*\*  
1891 \*CHECK ABILITY OF THE B CHANNEL VALIDITY CHECK ALARM TO CAUSE A  
1892 \*MASTER ERROR.  
1893 \*MASTER ERROR.  
1894 B SETUPA GO TO CLOSED SUBROUTINES 7 05585 J 01403  
1895 \* \*\*\*\*\*  
1896 ECHNRP B CLINVD GO SET INVLD CHARAC \* 18.14.08 7 05592 J 01808  
1897 \* CW BCHNST1 SET FOR RESET RESTART \* 4F-K 6 05599 H 05637  
1898 \* SAR 20 \*  
1899 \* MLNA XATES,XBAR AAR-BAR STORAGE TO 8S\* 12 05612 D 09215 09139 /  
1900 \* MLCWA 29999@,112 \*\*\*CAUSE B CHNL VC 12 05624 D 09331 00112 X  
1901 BCHNST ITR1 BNQ BCE BCHNRP,CCM1AD,C TAD0E1-1,TAD2-NOT1\* 7 05636 J 08719 Q  
1902 \* \*\*\*\*\*  
1903 \* \*\*\*\*\*  
1904 C XBAR,300105@ CORRECT RST-RESTRT OCCUR 11 05655 C 09139 09356  
1905 BE BCHNND GO IF YES 7 05666 J 05681 S  
1906 B ERROR GO TO ERROR ROUTINE 7 05673 J 01659  
1907 H . 1 05680 .  
1908 \*ERROR HALT-B CHANNEL VALIDITY CHECK FAILS TO CAUSE A  
1909 \*MASTER ERROR.  
1910 \*SCOPE LCOP POINT-18.14.08 4F,1102D226  
1911 BCHNND BNQ ITR1 7 05681 J 08719 Q  
1912 BCE BCHNRP,TAD1,1 12 05688 B 05592 01001 1  
1913 B CLEARC CLEAR INVALID CHARACTER 7 05700 J 01877

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*****1915 *****SCHECK RBC INTERLOCK IF SYSTEM HAS A 1405 ON CHANNEL ONE.
1916 SW XFILEA SET NOT READY INDICATOR
1917 BCE *68,CHNL1&27.F CHNL 1 1405 PRESENT
1918 B RBCEND19 NO
1919 B SETUPA GO TO CLOSED SUBROUTINES
1920 C W RBCEST1 SET FOR RESET-RESTART
1921 SAR 20
1922 MLCWS &N&.8 NOP SBR INSTRUCTION
1923 RBCCK SD 1,XFILE SEEK
1924 BCB1 RBCCK GO IF BUSY
1925 BA1 RBCEER GO-ERRCR-CANNOT SEEK OK
1926 MRCWG XFILE,WRTBOT STORE FOR WRITING
1927 ***** RBCERP MLNA XATES,XBAR AAR-BAR STORAGE TO 8$*
1928 SW XFILEA SET NOT READY INDICATE*
1929 BA1 *61
1930 WC 1,WRTBOT WRITE ON CE TRACK *
1931 BCBL *-16 * 18.14.0
1932 BA1 *61 * 4E-E
1933 BCBL *-16 * 13.74.0
1934 BA1 *61 * 13.72.0
1935 RBCERP WD 1,WRTBOT ***CAUSE RBC INTERLOCK *
1936 BCBL *-16 GO IF BUSY
1937 RBCEST BA1 *67 GO ON ANY IO STATUS *
1938 CW XFILEA CLR E 1405 NT RDY IND*
1939 BNQ ITRL *
1940 BCE RBCERP,COMTAC,C TAD0E1-1,TAD2-NOT1*
1941 ***** C XAAR,ERBCRB CORRECT RST-RSTRT OCCUR
1942 BE RBCEND GO IF YES
1943 BW RBCEER,XFILEA GO-E 1405 NOT READY
1944 B ERROR GO TO ERROR ROUTINE
1945 H ERROR HALT
1946 *****1947 *ERRCR HALT-TWO SUCCESSIVE WRITE DISK INSTRUCTIONS ON
1948 *YOUR CHANNEL ONE 14C5 FAILED TO CAUSE AN RBC
1949 *INTERLOCK ALARM.
1950 *SCOPE LOOP POINT-18.14.08 4E,11D2C21E

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## 1410 ALARM PROGRAM

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PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1952		B	RBCEND	7	05936	J 05970
1953	RBCERR	B	ERROR	7	05943	J 01659
1954	H			1	05950	.
1955	*ERRCR HALT-UNABLE TO SEEK AND/OR WRITE ON THE CE					
1956	*TRACK OF YOUR CHANNEL ONE 1405 MOD 0, ACCESS 0, DUE TO					
1957	*AN IO STATUS INDICATOR COMING ON. ROUTINE SKIPPED.					
1958	BNQ	ITRI		7	05951	J 08719 Q
1959	BCE	RBCCK,TADI,1		12	05958	B 05764 01001 1
1960	RBCEND	BNQ	ITRI	7	05970	J 08719 Q
1961	BCE	RBCRP,TADI,1		12	05977	B 05800 01001 1
1962	*****	*****	*****			
1963	*\$CHECK RBC INTERLOCK ALARM IF SYSTEM HAS A 1405 ON CHANNEL TWO.					
1964	SW	XFILFA	SET NOT READY INDICATR	6	05989	, 09237
1965	BCE	*E8,CHNL2&27,F	CHNL 2 1405 PRESENT	12	05995	B 06014 01373 F
1966	B	RBCFNDE19	NO	7	06007	J 06271
1967	B	SETUPA	GO TO CLOSED SUBROUTINES	7	06014	J 01403
1968	CW	RBCFST&1	SET FOR RESET-RESTART	6	06021	D 06149
1969	SAR	20		7	06027	G 00020 A
1970	MLCWS	ZNG&,8	NOP SBR INSTRUCTION	12	06034	D 09306 00008 7
1971	SD	2,XFILF	SEEK	10	06046	M EOF 09260 R
1972	BCB2	*-16	GO IF BUSY	7	06056	X 06046 2
1973	BA2	RBCFER	GO-ERROR-CANNOT SEEK OK	7	06063	X 06225 H
1974	MRCWG	XFILF,WRTBCF	STORE FOR WRITING	12	06070	D 09260 09691 L

1410 ALARM PROGRAM  
OPCOD OPERAND

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PGLIN	LABEL	CT	ADDR	INSTRUCTION
1976	*			
1977	RBCFRP	M1NA	XATES,XBAR	AAR-BAR STORAGE TO 8S*
1978	*	SW	XFILFA	SET NOT READY INDICATE*
1979	*	BA2	*E1	
1980	*	WD	2,WRTBOT	WRITE ON CE TRACK *
1981	*	BCB2	*-16	60 IF BUSY
1982	*	BA2	*E1	
1983	RBCFRB	WD	2,WRTBOT	***CAUSE RBC INTERLOCK *
1984	*	BCB2	*-16	60 IF BUSY
1985	RBCFST	BA2	*E7	GO ON ANY 10 STATUS *
1986	*	CW	XFILFA	CLR F 1405 NT RDY INDE*
1987	*	BNQ	ITRI	
1988	*	BCE	RBCFRP,CCM1AD,C	TAD0G1-1,TAD2-NOT1*
1989	*			
1990	C	XAAR,ERBCFRB		
1991	BE	RBCFND	GO IF YES	
1992	BW	RBCFER,XFILFA	GO-F 1405 NOT READY	
1993	B	ERROR	GO TO ERROR ROUTINE	
1994	H		ERROR HALT	
1995	*	ERRCR HALT-TWO SUCCESSIVE WRITE DISK INSTRUCTIONS ON		
1996	*	YOUR CHANNEL TWC 14C5 FAILED TO CAUSE AN RBC		
1997	*	INTERLOCK ALARM.		
1998	*	SCOPE LCCL POINT-18.14.C8 4E,11D2C21E		
1999	B	RBCFND		
2000	RBCFER	B	ERROR	GO TO ERROR ROUTINE
2001	H		ERROR HALT	
2002	*	ERRCR HALT-UNABLE TC SEEK AND/OR WRITE ON THE CE		
2003	*	TRACK OF YOUR CHANNEL TWO 1405 MOD 0,ACCESS 0,DUE TO		
2004	*	AN 10 STATUS INDICATOR COMING ON.ROUTINE SKIPPED.		
2005	BNQ	ITRI		
2006	BCE	RBCFCK,TAD1,1		
2007	RBCFND	BNQ	ITRI	
2008	BCE	RBCFRP,TAD1,1		
12	06082	D 09215 09139 /		
6	06094	* 09237 6		
7	06100	X 06107 H		
10	06107	H 0F1 09691 W		
7	06117	X 06107 2		
7	06124	X 06131 H		
10	06131	H 0F1 09691 W		
7	06141	X 06131 2		
7	06148	X 06161 H		
6	06155	W 09237		
7	06161	J 08719 Q		
12	06168	B 06082 01119 C		
11	06180	C 09134 09366		
7	06191	J 06252 S		
12	06198	V 06225 09237 1		
7	06210	J 01659		
1	06217	.		

## 1410 ALARM PROGRAM

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PGLIN LABEL OPCODE OPERAND CT ADDRS INSTRUCTION

2010						
2011	***\$BRANCH BACK FROM HERE IF TADS IS A ONE.					
2012	BCE RSETBB,TADS,1 REPEAT RST-RSTRT SECTION			12	06271	B 02888 01005 1
2013	*****					
2014\$	*SCHECK IO INTERLOCK CHECK ALARM INDICATOR.					
2015	MILKIN B NORMAL TO CLOSED SUB ROUTINES			7	06283	J 01732
2016	CW MILKND&1 SET FOR RESET-RESTART			6	06290	□ 06394
2017	SAR 6			7	06296	6 00006 A
2018	B TYP1			7	06303	J 01120
2019	DCW @ IO INTRLK ALARM.*3,G			17	06326	
2020	B TYP1			7	06328	J 01120
2021	DCW @ OFF-ERR 3			10	06344	
2022	DC MILKER G			5	06349	06392
2023	DCW 2MA			1	06350	
2024	B SPTYPA ON-OK,COMP RESET,START TP			7	06351	J 08836
2025	*****					
2026	MILKRP BAI *E1			7	06358	R 06365 G
2027	BNQ ITR1			7	06365	J 08719 Q
2028	RCP XSPACE			10	06372	H ZTO 09204 R
2C29	RCP XSPACE			10	06382	H ZTO 09204 R
2030	*****					
2031	MILKER H DUMMY ERROR HALT			1	06392	-
2032	*ERRCR-IC INTERLOCK CHECK ALARM INDICATOR SHOULD NOW					
2C33	*BE CN-NC SCOPE LOOP PROVIDED FOR THIS ERROR.					
2034	*STATIC SCOPE POINT-18.14.11 21,11D2K25C					
2035	MILKND BAI *E1			7	06393	R 06400 G
2036	BNQ ITR1			7	06400	J 08719 Q
2037	BCE MILKRP,TAD1,1			12	06407	B 06358 01001 1

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***** *SCHECK ADDRESS CHECK ALARM INDICATOR.
      * GO TO CLOSED SUBROUTINES
      * SET FOR RESET-RESTART
***** B  NORMAL          MACCNDE1
      C# MACCNDE1
      SAR 6
      B  TYP1
      DC# @ ADDRESS CHK ALARM.2.G
      B  TYP1
      DC# @ OFF-ERR 2
      DC  MACDER
      DC# @MA
      DCW  SPTYPA  ON-OK,COMP RESET,START TP
      * ****
      * ADCRP  SCNLS 5    ***CAUSE ADDRESS CHECK *
      *           IC 2C
      *   DC  @OCOSH 2    *
      * ****
      * ADCER  H    DUMMY ERROR HALT
      *ERRR-ADDRESS CHECK ALARM INDICATOR SHOULD NOW BE ON.
      *NO SCOP LOOP PROVIDED FOR THIS ERROR.
      *STATIC SCOP POINT-18.14.11 2C,11D2K25A
***** ADCND  BNQ  ITR1
      BCE  MACCRP,TAD1,1
***** *SCHECK RBC INTERLOCK ALARM INDICATOR IF ONE OF THE PREVIOUS 1405
      **ROUTINES HAS BEEN RUN.
      BW  RBCIAA,XFILEA  GO-NO E 1405 READY
      MLCS @XA,RBCIRP61  SET UP FOR E 1405
      MLCS @RG,RBCIAC
      MRCWG XFILE,WRTBOT
      B  RBCIAB
      RBCIAA  BW  RBCINDE19,XFILFA  GO-NO 1405 READY
      MLCS @XA,RBCIRP61  SET UP FOR F 1405
      MLCS @XA,RBCIAC
      MRCWG XFILF,WRTBOT
*****
```

## 1410 ALARM PROGRAM

PGLIN	LABEL	OPCODE	OPERAND	CF	ADDRS	INSTRUCTION
2074	RBCIAB	B	NORMAL		7	06631 J 01732
2075		CW	: RBCINDE1		6	06638 □ 06810
2076		SAR	6.		7	06644 G 00006 A
2077	B	TYP1			7	06651 J 01120
2078	CCW	@ RBC INTRLK ALARM.*.6			18	06675
2079	B	TYP1			7	06677 J 01120
2080	DCW	@ OFF-ERR 3			10	06693
2081	DCW	RBCIER	G		5	06698 06784
2082	DCW	AM6			1	06699
2083	B	SPTYPA	ON-OK.COMP RESET.START TP		7	06700 J 08836
2084	MLCS	RBCIAAC,RBCIAD			12	06707 D 06753 06760 3
2085	MLCS	RBCIRPEL,RBCIAECL			12	06719 D 06744 06768 3
2086	MRN	RBCIRPE5,RBCIAEES			12	06731 D 06748 06772 9
2087	*****	*****	*****			
2088	RBCIRP	WC 1,WRTBCT	WRT ON CE TRACK *	13-74.02	10	06743 H 2F1 09691 W
2089	RBCIAC	BC81 *-16	GO IF BUSY *	18 28	7	06753 R 06743 2
2090	RBCIAD	BA1 *E1	*		7	06760 R 06767 H
2091	RBCIAE	WC 1,WRTBOT	***CAUSE RBC INTER LOCK *		10	06767 H 2F1 09691 W
2092	*	BC81 *-16	*		7	06777 R 06767 2
2093	*	*	*			
2094	RBCIER	H RBCIRP			6	06784 - 06743
2095	*ERRCR-T+E RBC INTERLOCK ALARM INDICATOR SHOULD NOW					
2096	*BE ON.					
2097	*STATIC SCOPE POINT-13.74.02 28.11D2D07K					
2098	RBCIST	MLCS RBCIAAC,*E1			12	06790 D 06753 06802 3
2099		BA1 *E1			7	06802 R 06809 H
2100	RBCIND	BNQ ITRL			7	06809 J 08719 Q
2101	BCE	RBCIRP,TADI.1			12	06816 B 06743 01001 1

PGLIN LABEL OPCOD OPERAND CT ADDRS INSTRUCTION

```

***** *SCHECK INSTRUCTION CHECK ALARM VIA CYCLE CHECK ERROR DUE TO NO
2104 *$CYCLE CCNTRL LATCH BEING CN CAUSED BY ILLEGAL INSTRUCTION LENGTH
21C5
21C6     B   NORMAL    TO CLOSED SUBROUTINES
          CH  MIINNDE1  SET FOR RESET-RESTART
2107     SAR  6
21C8
21C9     B   TYP1
          DCW  @ INSTRUCT CH-K ALARM.3,G
2110     B   TYP1
          DCW  @ NOT ON ALONE-ERR 3
2111
2112     DC  MIINER
          DCW  G
          DCW  aMa
2113     B   TYP1
          DCW  @ ON ALCNE-CK,RESET,START.6
2114
2115
2116
2117   **** 09999  ***CAUSE INSTRUCTION CHK. 11 21
          MIINRP SW
          *  DC  00999592  VIA LONG SW
          *  ****1G-F
2118   **** 09999  ***CAUSE INSTRUCTION CHK. 11 21
          MIINRP H
          *  DC  00999592  VIA LONG SW
          *  ****1G-F
2119
2120
2121
2122   *ERRCR-IF INSTRUCTION CHECK ALARM IS NOT ON-INDICATOR 1G 1E 2D 3B
          * FAILURE.
2123
2124   *STATIC SCPE POINT-18.14.11 21,11D2K25C
          *ERRCR-IF ADDITIONAL ALARMS ARE ON WITH THE
          *  INSTRUCTION CHECK ALARM-CYCLE CHECK ERROR
          *  CIRCUIT FAILURE.
2125
2126
2127
2128   *SCOPE LCOP POINT-12.12.43 1G,11C1A06C
          MIINND BNQ  ITRI
2129
2130     BCE  MIINRP,TAD1.1

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7 06828 J 01732  
 6 06835 □ 06960  
 7 06841 G 00006 A  
 7 06848 J 01120  
 7 06874 J 01120  
 7 06876 J 01120  
 19 06901  
 5 06906 06953  
 1 06907  
 7 06908 J 01120  
 25 06939

7 06959 J 08719 Q  
 12 06966 B 06941 01001 1

141C ALARM PROGRAM

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CT ADDRS INSTRUCTION

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
2132				*****		
2133				***CHECK THE ABILITY OF AN CP REGISTER SET CHECK ALARM		
2134				*STO CAUSE A MASTER ERROR.		
2135		B	NORMAL	TO CLOSED SUBROUTINES	7	06978 J 01732
2136		CW	MORSNDE1	SET FOR RESET-RESTART	6	06985 □ 07097
2137		SAR	6		7	06991 G 00006 A
2138		B	TYPL		7	06998 J 01120
2139		DCW	3 CP REG SET ALARM:3,G		18	07022
2140		B	TYPL		7	07024 J 01120
2141		DCW	3 NOT ON ALONE-ERR:3		19	07049
2142		DC	MORSER		5	07054 07095
2143		DCW	G @MA		1	07055
2144		B	TYPL		7	07056 J 01120
2145		DCW	3 ON ALONE-OK,RESET,START:3,G		25	07087
2146			*****			
2147		PORSRP	DCW a CC005a ***CAUSE CP REG SET CHK: 4G-F		6	07094
2148			*****		1	07095 .
2149			PORSR H			
2150			*ERROR-ONLY THE CP REG SET CHECK ALARM SHOULD BE ON.			
2151			*FAILURE IF IT IS NOT ON OR IF MULTIPLE ALARMS ARE ON.			
2152			*TO SCOPE LOOP,PLACE A BRANCH TO LABEL MORSRP-S AT			
2153			*LOCATION 00001,AND USE RESET-RESTART MODE.			
2154			*SCOPE LOOP POINT-18.14.08 4G,11D2D2ZG		7	07096 J 08719 Q
2155		MORSND	BNQ ITRI		12	07103 B 07094 01001 1
2156		BCE	MORSRP,TADI,1			

## 1410 ALARM PROGRAM

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PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
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2158

\*\*\*\*\* \*\$AUTO SECTION ENDED.

2159						
2160	AUTNDD	BCE	MANSEC,TAD4.1	GO IF MANUAL REQUESTED	12	07115 B 07230 01004 1
2161		BCE	*E8.TAC3.1		12	07127 B 07146 01003 1
2162		B	ODDFCL	GO TURN 1405 SWITCHES OFF	7	07139 J 09045
2163		BCE	AUTNAA,TAD0.1		12	07146 B 07179 01000 1
2164		B	TYP1		7	07158 J 01120
2165		DCW	aEND C022 AUTO&,G		13	07177
2166	AUTNAA	BCE	RSTDAA,TAD3.1	REPEAT ALL BUT NRML SECT	12	07179 B 02611 01003 1
2167		MRCWG	XSTRIC,1	SET TO RESET & START PROG	12	07191 D 09176 00001 D
2168		CW	START&1		6	07203 n 02001
2169		SAR	6		7	07209 G 00006 A
2170		B	ODDFCL	GO TURN 1405 SWITCHES OFF	7	07216 J 09045
2171		B	LOAD		7	07223 J 00400
2172	MANSEC	NCP			1	07230 N
2173						
2174				***** SPANUAL INTERVENTION ROUTINE-CHECK THE ABILITY OF THE A CHANNEL		
2175				***** \$VALIDITY CHECK ALARM TO CAUSE A MASTER ERROR		
2176		B	SETUPA	GO TO CLOSED SUBROUTINES	7	07231 J 01403
2177		B	TYP1	18.14.08 4F	7	07238 J 01120
2178		DCW	a GRND 11D2D22K&	PREVENT B CHNL VC	14	07258
2179		DC	aESTART&,G		6	07264
2180		H		WAIT FOR GROUND	1	07266
2181	MAVCEX	B	CLINVND	SET INVLD CHAR AT 00110	7	07267 J 01808
2182		CW	MAVCER&1	SET FOR RESET RESTART	6	07274 n 07396
2183		SAR	20		7	07280 G 00020 A
2184		MLCWA	a9999a,112	ALARM IF NOT GROUNDED	12	07287 D 09331 00112 X
2185		B	CLINVND	SET INVLD CHAR AT 00110	7	07299 J 01808

1410 ALARM PROGRAM  
OPCODE OPERAND

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
2187		CW	MAVCST&1	6	07306	■ 07344
2188		SAR	20	7	07312	6 00020 A
2189	*	*****	SET FOR RESET RESTART			
2190	MAVCRP	MLNA XATES,XBAR	AAR-BAR STORAGE TO 8\$*	12	07319	0 09215 09139 5
2191	*	SCNLA 112,299992	**CAUSE A CHNL VAL CHK*	12	07331	0 00112 09331 8
2192	MAVCST	BNQ ITR1	4F-H	7	07343	J 08719 Q
2193	*	BCE MAVCRP,COMTAD,C	TADCC1-1,TAD2-NOT1*	12	07350	8 07319 01119 C
2194	*	*****	*****			
2195	C	XAAR,&C010\$A	CORRECT RST-RSTRT OCCUR	11	07362	C 09134 09356
2196	BE	MAVCND	GO IF YES	7	07373	J 07422 S
2197	B	ERROR	GO TO ERROR ROUTINE	7	07380	J 01659
2198	H			1	07387	.
2199	*	ERRCR HALT-A CHANNEL VALIDITY CHECK FAILS TO CAUSE A				
2200	*	MASTER ERROR.				
2201	*	SCOPE LCOP POINT-18.14.08 4F,11D2D226				
2202	B	MAVCND	GO END ROUTINE	7	07388	J 07422
2203	MAVCR	B	ERROR	7	07395	J 01659
2204	H			1	07402	.
2205	*	ERRCR HALT-OPERATOR ERROR-PROPERLY GROUNDING THE				
2206	*	DESIGNATED POINT WOULD HAVE PREVENTED A 8 CHANNEL VC				
2207	*	ERRCR-THE 8 CHNL VC OCCURRED-THE A CHANNEL				
2208	*	VALIDITY CHECK ALARM CIRCUITRY WAS NOT CHECKED THIS				
2209	*	PASS.				
2210	BNQ	ITR1		7	07403	J 08719 Q
2211	BCE	MAVCEX,TAD1,1		12	07410	B 07267 01001 1
2212	BNQ	ITR1		7	07422	J 08719 Q
2213	BCE	MAVCRP,TAD1,1	CLEAR INVALID CHARACTER	12	07429	B 07319 01001 1
2214	B	CLEARC		7	07441	J 01877
2215	B	TYP1		7	07448	J 01120
2216	DCW	a LGRNDESTART\$G		13	07467	
2217	H	WAIT FCR GROUND REMOVAL		1	07469	.

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
2219	*****					
2220	***\$MANUAL INTERVENTION ROUTINE-CHECK THE ABILITY OF THE A REG SET					
2221	***\$ERROR ALARM TO CAUSE A MASTER ERROR.					
2222	MARSAA	B	NORMAL			
2223		CW	MARSNDE1	GO TO CLOSED SUBROUTINES	7	07470 J 01732
2224		SAR	6	SET FOR RESET-START	6	07477 H 07608
2225	MARSAB	B	TYP1	18.14.07 SD	7	07483 G 00006 A
2226		DCW	2 1.GRND 11D2D26DESTART2,G		7	07490 J 01120
2227		B	TYP1		22	07518
2228		DCW	2 2.A REG SET ALARM:2,G		7	07520 J 01120
2229		B	TYP1		19	07545
2230		DCW	2 NOT CN ALONE-ERR 2		7	07547 J 01120
2231		DC	MARSND		20	07573
2232		DCW	2G		5	07578 07607
2233		B	SPTYPB	ON ALONE-OK,UNGRND,RST,ST	1	07579
2234		H	WAIT FOR GROUND		7	07580 J 08882
2235	*****				1	07587 -
2236	PARSRP	SCNLS	5.5EX1	18.14.08 ***CAUSE A REG SET ERR *	12	07588 D 00005 00005
2237	PARSST	H	MARSRP	* 4G-A	6	07600 - 07588
2238	*	*	*	DUMMY ERROR HALT	1	07606 -
2239	PARSER	H				
2240	***ERRCR HALT-A REG SET ALARM FAILED TO CAUSE A MASTER					
2241	***ERRCR.TC SCOPE LOOP,CHANGE HALT AT LABEL MARSST TO A					
2242	***BRANCH TO LABEL MARSRP AND START AT LABEL MARSRP.					
2243	***SCOPE LCOP POINT-18.14.08 4G,11D2D22G					
2244	MARSND	BNQ	ITRI		7	07607 J 08719 Q
2245		BCE	MARSAB,TAD1,1		12	07614 B 07490 01001 1

## 1410 ALARM PROGRAM

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PGLIN	LABEL	OPCODE	OPERAND	CT	ADDR	INSTRUCTION
2247		*****	*****			
2248		*****	*****			
2249		*****	*****			
2250		*****	*****			
2251		*****	*****			
2252		*****	*****			
2253	MAEXAA	B	TYP1			
2254		DCW	2 1.GRND 11D2C09BE <sup>a</sup> START <sup>a</sup> ,G	7	07626	J 01732
2255		B	TYP1	6	07633	D 07764
2256		DCW	2 2-ADCR EXIT ALARM, <sup>a</sup> 2,6	7	07639	G 00006 A
2257		B	TYP1	7	07646	J 01120
2258		DCW	2 NOT ON ALONE-ERR 2	22	07674	
2259		DC	MAEXER	7	07676	J 01120
2260		DCW	<sup>a</sup> H <sup>a</sup>	19	07701	
2261		B	SPTYPB	7	07703	J 01120
2262		H	ON ALONE-OK,UNGRND,RST,ST WAIT FOR GROUND	20	07729	
2263		*	*****	5	07734	07762
2264	MAEXRP	SCNL S	90CX1,5 ***CAUSE ADDR EXIT ALARM*	1	07735	
2265	MAEXST	H	MAEXRP *	7	07736	J 08882
2266	*	*	*****	1	07743	*
2267	MAEXER	H	DUMMY ERROR HALT	1	07762	*
2268		*****	*****			
2269		*****	*****			
2270		*****	*****			
2271		*****	*****			
2272	MAEXND	BNQ	IRI	7	07763	J 08719 Q
2273		BCE	MAEXAA,TAD1,1	12	07770	B 07646 01001 1

\*MANUAL INTERVENTION ROUTINE-CHECK ABILITY OF THE ADDRESS EXIT

\*SALARY TC CAUSE MASTER ERROR.

B NORMAL GO TO CLOSED SUBROUTINES

CW MAEXND1 SET FOR RESET START

SAR 6

B TYP1

DCW 2 1.GRND 11D2C09BE<sup>a</sup>START<sup>a</sup>,G

B TYP1

DCW 2-ADCR EXIT ALARM,<sup>a</sup>2,6

B TYP1

DCW 2 NOT ON ALONE-ERR 2

DC MAEXER

DCW <sup>a</sup>H<sup>a</sup>

B SPTYPB

ON ALONE-OK,UNGRND,RST,ST

WAIT FOR GROUND

H

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PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
2275	*****					
2276	*****					
2277	*****					
2278	*****					
2279	PASDAA	B	NORMAL	GO TO CLOSED SUBROUTINES	7	07782 J 01732
2280		CW	MASCND1	SET FOR RESET-START	6	07789 H 07920
2281		SAR	6		7	07795 G 00006 A
2282	PASDAB	B	TYP1	18.14.01 SE	7	07802 J 01120
2283		DCW	a 1.GRND 11D2C07DESTARTa,G		22	07830
2284		B	TYP1		7	07832 J 01120
2285		DCW	a 2.A CHAR SEL ALARM.a,G		20	07858
2286		B	TYP1		7	07860 J 01120
2287		DCW	a NOT ON ALONE-ERR a		20	07886
2288		DC	MASDER		5	07891 07913
2289		DCW	aH6		1	07892
2290		B	SPTYPB	ON ALONE-OK,UNGRND,RST,ST	7	07893 J 08882
2291		H		WAIT FOR GROUND	1	07900 .
2292	*****			18.14.01		
2293	PASDRP	SCNLS	MASDRP11,PASDRP11	*** A CHAR SEL*	12	07901 D 07912 07912
2294	*			3D-E 3E-R		
2295	PASDR	H	MASDRP	ERROR HALT	6	07913 • 07901
2296	*			4I-H		
2297	*			ERRCR HALT-GATING TIE A DATA AND OP MOD REGS BOTH TO		
2298	*			THE A CHANNEL CAUSED NO A CHAR SEL ALARM.PROGRAM		
2299	*			CANNOT BE LOOPEC.IF NO ALARY'S ARE ON,ERROR MAY BE		
2300	*			REPEATED BY PRESSING START.		
2301	PASCNE	BNQ	ITRI		7	07919 J 08719 Q
2302		BCE	MASCAB,TADI,1		12	07926 B 07802 01001 1

1410 ALARM PROGRAM  
PGLIN LABEL OPCODE OPERAND

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CT ADDRS INSTRUCTION

\*\*\*\*\*  
2304 \*\*\*\*\*  
2305 \*\$MANUAL INTERVENTION ROUTINE-CHECK A CHAR SEL ALARM WHEN E2 AND A  
2306 \*S DATA REGS ARE BOTH GATED TO THE A CHANNEL.  
2307 PASCAA B NORMAL TO CLOSED SUB ROUTINES  
2308 CW MASCNDC1 SET FOR RESET-RESTART  
2309 SAR 6  
2310 PASCAB B TYP1 18.14.01 5C  
2311 DCW @ 1.GRND 11D2C04P@.G  
2312 B TYP1  
2313 DCW @ 2.A CHAR SEL ALARM@.A.G  
2314 B TYP1  
2315 DCW @ NOT ON ALONE-ERR A  
2316 DC MASCR  
2317 DCW @Ha  
2318 B SPTYPB ON ALONE-OK.UNGRND.RST.ST  
2319 \* \*\*\*\*\* 18.14.01  
2320 PASCRP H MASCRP \*\*\*CAUSE A CHAR SEL ALRM\* 38-D 3C-R  
2321 \* \*\*\*\*\*  
2322 PASCR H DUMMY ERROR HALT  
2323 \*ERRCR HALT-GATING THE E2 AND THE A DATA REGS TO THE A  
2324 \*CHANNEL AT THE SAME TIME CAUSED NO A CHAR SEL ALARM.  
2325 \*STATIC SCOPE POINT-18.14.01 2C.11D2C03C  
2326 PASCND BNQ ITR1  
2327 BCE MASCAB,TAD1.1  
\*\*\*\*\*

## 1410 ALARM PROGRAM

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PGLIN	LABEL	OPCODE	OPERAND	CT	ADRS	INSTRUCTION
2329	*****					
2330	*\$MANUAL INTERVENTION ROUTINE-CHECK ABILITY CF B REG SET ERRCR TO					
2331	*\$CLEAR MASTER ERRCR.NOTE-ACTUALLY B REG RESET ERROR.					
2332	MERSAA	B	NORMAL			
2333		Ch	MERSND@1			
2334		SAR	6			
2335		B	TYP1			
2336		DCW	2 1.GRNC 11D2B23PESTART@.G			
2337		B	TYP1			
2338		DCW	2 2.B REG SET ALARM@.G			
2339		B	TYP1			
2340		DCW	2 NOT CN ALONE-ERR 2			
2341		DC	MBRSER			
2342		DCW	G			
2343		B	SPTYPB			
2344		H	ON ALONE-OK.UNGRND,RST,ST			
2345		H	WAIT FOR GROUND			
2346	MBRSRP	NCP	*****cause B REG SET ALARM* 4G-B*****			
2347	*	BNQ	ITRI			
2348	*	BCE	MBRSRP,COMIAC,C TAD0G1-1,TAD2-NOT1*			
2349	*	*****	*****			
2350	MBRSER	H	MBRSRP			
2351			*ERRCR HALT-B REG SET ALARM CIC NOT CAUSE ALARM STOP.			
2352			*THIS ROUTINE CAN BE LOOPED ONLY IF B REG SET ALARM IS			
2353			*FAILING.			
2354			*SCOPE LCCP POINT-18.14.08 4G-11D2D22G			
2355	MBRSNC	BNQ	ITRI			
2356		BCE	MBRSAA,TADI.1			

1410 ALARM PROGRAM  
OPCODE OPERAND

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION	C022	PAGE
2358	*****							
2359	*****							
2360	*****							
2361	MCNSAA	B	NORMAL			GO TO CLOSED SUBROUTINES	7	08239 J 01732
2362		CW	POMSND1			SET FOR RESET-START	6	08246 H 08410
2363	POMSAB	SAR	6				7	08252 G 00006 A
2364		B	TYP1			18-14.09 SA	7	08259 J 01120
2365		DCW	2 1.GRND 11D2B24CESTARTA.G				22	08287
2366		B	TYP1				7	08289 J 01120
2367		DCW	2 2.SHUD STOP CN OP MOD SET ALARM2.G				32	08327
2368		B	TYP1				7	08329 J 01120
2369		DCW	2 3.IF NOT-ERR 3				14	08349
2370		DC	M0NSER				5	08354 08408
2371		DCW	G 2M6				1	08355
2372		B	TYP1				7	08356 J 01120
2373		DCW	2 4.IF OK-UNGRND,RESET,STARTA.G				27	08389
2374		H	WAIT FOR GROUND				1	08391 *
2375	*****					18-14.08		
2376	POMSRP	BAL	*E1	*		41-G	7	08392 R 08399 H
2377		SSF	0			***CAUSE OP MCD SET ERR *	2	08399 K 0
2378		*	B			M0NSRP *	7	08401 J 08392
2379	*					DUMMY ERROR HALT	1	08408 *
2380	P0NSER	H						
2381			•ERRCR HALT-MACHINE SHOULD NOW BE STOPPED WITH ONLY					
2382			•THE CP MODIFIER SET ALARM ON. THIS ROUTINE MAY BE					
2383			•LOOPEC IN RESTART OR RESET-RESTART MODES.					
2384			•SCOPE LCCP POINT-18-14.08 41-11D2C21C					
2385	POMSND	BAL	*E1				7	08409 R 08416 H
2386		BNQ	ITRI				7	08416 J 08719 Q
2387	BCE	POMSAB,TAD1,I					12	08423 B 08259 01001 1

1410 ALARM PROGRAM  
PGLIN LABEL CPCOD OPERAND

C022 PAGE 68  
CT ADDRS INSTRUCTION

\*\*\*\*\*  
2389 \*\$MANUAL INTERVENTION ROUTINE-CHECK THE ABILITY OF THE B CHARACTER  
2390 \*\$SELECT ERRCR TC CAUSE A MASTER ERROR.  
2391  
2392 B NORMAL GO TO CLOSED SUBROUTINES 7 08435 J 01732  
2393 CW MBCSNDE1 6 08442 H 08603  
2394 SAR 6 7 08448 G 0006 A  
2395 #BCSAA B TYP1 15.30.10 46 7 08455 J 01120  
2396 DCW 2 1.GRND 11C3H22B\$START@.G 22 08483  
2397 B TYP1  
2398 DCW 2 2.SHUD STOP ON B CHAR SEL ALARM@.G 32 08523  
2399 B TYP1 7 08525 J 01120  
2400 DCW 2 3.IF NOT-ERR A 14 08545  
2401 DC MBCSER G 5 08550 08601  
2402 DCW @MA 1 08551  
2403 B TYP1  
2404 DCW 2 4.IF OK-LNGRND,RESET,START@.G 7 08552 J 01120  
2405 H WAIT FOR GROUND 27 08585  
2406 \*#BCSRP SCNL\$ 1 \* 18.14.08 1 08587 .  
2407 \*#BCSRP SCNL\$ 1 \* 18.14.08 6 08588 D 00001  
2408 \*#BCSRP 4H-P  
2409 B MBCSRP CAUSE LOOP ON ERROR 7 08594 J 08588  
2410 PBCSER H 1 08601 .  
2411 \*ERRCR HALT-B CHAR SEL ERROR FAILED TO CAUSE A MASTER  
2412 \*ERRCR.NC\$ LOCPING ON ERROR.  
2413 \*SCOPE LCPC POINTI-18.14.C8 4F,11D2C21D 7 08602 J 08719 Q  
2414 #BCSNC BNQ ITR1 12 08609 B 08455 01001 1  
2415 BCE MBCSAA,TADL,1

PGLIN LABEL OPCOD OPERAND

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CT ADDRS INSTRUCTION

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2417	*****					
2418	*****					
2419	2418	BCE	*68,TAD3,1			
2420		B	ODDFCL	GO TURN 1405 SWITCHES OFF	7	08633 J 09045
2421		BCE	MANEND,TAD0,1		12	08640 B 08668 010000 1
2422		B	TYPL		7	08652 J 01120
2423		DCW	@END CC222@,G		8	08666
2424	PANEND	BCE	RSTICAA,TAD3,1	REPEAT ALL BUT NRML SECUT	12	08668 B 02611 01003 1
2425		MRCWG	XSTRIC,1	SET TO RESET & RESTART PR	12	08680 D 09176 00001 L
2426		CW	START&1		6	08692 □ 02001
2427		SAR	6		7	08698 G 00006 A
2428		B	ODDFCL	GO TURN 1405 SWITCHES OFF	7	08705 J 09045
2429		B	LOAD		7	08712 J 00400
2430	*****					
2431	*****					
2432	ITR1	SBR	EXITS	SET EXIT ADDRESS	7	08719 G 01117 B
2433	ITR2	RCP	ITR3@ <sup>1</sup>	ENTER ADDR TO BE ALTERED	10	08726 M ZTO 08761 R
2434		BEX1	ITR2,M	GO ANY BUT WLR & NO TRANS	7	08736 R 08726 M
2435		BNT1	ITR4	EXIT ON NO TRANSFSR	7	08743 R 08781 B
2436		BAL	*E1	RESET I/O INTERLOCK	7	08750 R 08757 H
2437	ITR3	RCPW	0	ENTER DATA	10	08757 L ZTO 00000 R
2438		BEX1	ITR3,M	BRANCH ANY BUT WLR	7	08767 R 08757 M
2439		BAL	*E1	RESET I/O INTERLOCK	7	08774 R 08781 H
2440	ITR4	B	CKTACA	GO INTERROGATE TADS 06162	7	08781 J 01017
2441	*****					
2442	*****					
2443	CHDRND6S	SBR	CHDRND6S	SSUBROUTINE TO FIND READY 1311 DRIVE.	7	08788 G 08834 B
2444		BCE	CHCRND,XIFLA,8	GD IF NO DRIVES READY	12	08795 B 08829 09271 B
2445		A	@26,XIFLA	INCREASE SELECTION	11	08807 A 09295 09271
2446		S	624,CHDRND6S		11	08818 S 09371 08834
2447	CHCRND	B	0	EXIT	7	08829 J 00000

## 1410 ALARM PROGRAM

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CT ADDRS INSTRUCTION

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
2449		*****	*****			*****
2450	***SPECIAL TYPEOUTS	SPTYPA	SBR SPTYND\$			
2451			B TYP1		7	08836 G 08880 8
2452			DCW @ ON-OK,CCMP RESET,START@,G		7	08843 J 01120
2453				24	08873	
2454	SPTYAD	B 0			7	08875 J 00000
2455	SPTYPB	SBR SPTYXDES			7	08882 G 08935 B
2456		B TYP1			7	08889 J 01120
2457		DCW @ ON-ALONE-OK,UNGRND,RESET,START@,G		33	08928	
2458	SPTYXD	B 0			7	08930 J 00000
2459	**#					
2460	*****	*****	*****			*****
2461	*SPREPARE 14C5 IF 14C5 IS PRESENT.					
2462	CCDFIL	BCE OCCFAA,C-N1E27,F		12	08937 B 08968 01316 F	
2463		BCE ODCFAA,C-N2E27,F		12	08949 B 08968 01373 F	
2464		B ODCFEX GO-NO 1405 PRESENT		7	08961 J 09038	
2465	CCDFAA	BW ODCFEX,XODCFI GO-SWITCHES ALREADY ON			12	08968 V 09038 09238 1
2466		B TYP1			7	08980 J 01120
2467		DCW @ 14C5 C.E.TSI & 1405 CMP DISABLE TO ON@,G		38	09024	
2468		CWSWIT SET TO HALT FOR SW.CHANGE			6	09026 H 01577
2469		SW XODCFI SET SW.ON INDICATOR			6	09032 * 09238
2470	CCDFEX	B CKNCPW67			7	09038 J 01576
2471	CCDFCL	SBR ODCFNDES			7	09045 C 09128 B
2472		BW *E8,XODCFI			12	09052 V 09071 09238 1
2473		B ODCFND GO- SWITCHES NOT ON			7	09064 J 09123
2474		CW ODCFAB61			6	09071 H 09118
2475		SAR 6			7	09077 G 00006 A
2476		B TYP1			7	09084 J 01120
2477		DCW @ 14C5 SWITCHES TO NORMAL@,G		24	09114	
2478		H WAIT FOR SWITCH CHANGES			1	09116 *
2479	CCDFAS	CW XODCFI CLEAR SWITCH ON INDICATOR			6	09117 H 09238
2480	CCDFND	B 0			7	09123 J 00000

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CT ADDRS INSTRUCTION

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
2482	*****					
2483	*\$CONSTANTS AND STORAGE					
2484	XAAR	DCW	0999992	AAR	CONTENTS ON RST-RSTART	5 09134
2485	XBAR	DCW	0999992	BAR	CONTENTS ON RST-RSTART	5 09139
2486	XSTRTA	SAR	Xaar	OCC01	RESET-RESTART ROUTINE A	7 09140 C 09134 A
2487		SBR	XBAR	00008		7 09147 C 09139 B
2488		B	0	0CC15		7 09154 J 00000
2489		DCW	0MA	00022		1 09161
2490	XSTRTB	CW	XINDIC	OOC01	RESET-RESTART ROUTINE B	6 09162 □ 09216
2491		B	0	00C07		7 09168 J 00000
2492		DCW	0MA	00C14		1 09175
2493	XSTRTC	B	C	00001	RESET-RESTART ROUTINE C	7 09176 J 00000
2494		DCW	0MA	0CC08		1 09183
2495	XROUTIN	S	E7.SETG065	00030	RSTART LAST ROUTINE	11 09184 S 09372 01467
2496		B	RESTR	00041		7 09195 J 01455
2497		DCW	0MA	00048		1 09202
2498	XMCDE	DCW	2 2		N-NRML,R=RSTRSTART,E=RSTART	1 09203
2499	XSPACE	DCW	2 2.G			1 09204
2500	XATES	DCW	288888888888			10 09215

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PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION	
2502	XINDIC	DCW	a,a		1	RST-RSRT MAY CLEAR W	
2503	XEEDITA	DCW	a,a,a	4	09220	EDIT A FIELD DATA	
2504	XMASA	DCW	a,UNGRND&,G	7	09221	SPECIAL MESSAGE	
2505	XOPRSA	DCW	XATES-10	5	09233	09205	
2506	XIBLA	DCW	a,a	1	09234		
2507	XTBLB	DCW	a,a	1	09235		
2508	XFILEA	DCW	a,a	1	09236	WM IF E CHNL 1405 NOT RDY	
2509	XFILFA	DCW	a,a	1	09237	WM IF F CHNL 1405 NOT RDY	
2510	XOCCFI	DC	a,a	1	09238	WM IF 1405 SWITCHES ON	
2511	XRBCEA	DCW	WRTBOT		5	09243	09691
2512	XRBCFA	DCW	WRTBOT		5	09248	09691
2513	XFILE	DCW	00C000001&,G	1	09249	1405 E CHANNEL SELECTION	
2514		DCW	a,a,G	1	09258		
2515	XFILF	DCW	0CCCCOCOTA,&G	1	09260	1405 F CHANNEL SELECTION	
2516		DCW	a,a,G	1	09269		
2517	XIFLA	DCW	00C0000001&,G	10	09271		
2518	XIFLCK	DC	a,a,G	1	09282		
2519	XNRML	B	NRPLAA, G a,a	7	09284	J 02561	
2520		DCW	PST	1	09291		
2521							

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C022 ADDRS INSTRUCTION

PCLIN	LABEL	CONSTANTS.	C022
2523		09292	
2524	STLITEP	09292	
2525	LTORG *	09293	
2525	AAA	09294	
2525	A A	09295	
2525	316	09299	
2525	323	09303	
2525	£2400	09304	
2525	322223	09305	
2525	£1	09306	
2525	ARA	09310	
2525	ANG	09315	
2525	AS.503	09316	
2525	30000003	09317	
2525	C	09322	
2525	AM2	09327	
2525	362	09331	
2525	36000002	09335	
2525	3000052	09340	09235
2525	399992	09341	
2525	300002	09346	05183
2525	XTBLS	09351	05456
2525	304	09356	
2525	IFLEZX	09361	05849
2525	IFLFZX	09366	06131
2525	2001092	09367	
2525	RBCERB	09368	
2525	RBCFRB	09369	
2525	324	09371	
2525	306	09372	
2525	324		
2525	624		
2525	67		

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PGLIN	LABEL	OPCODE	OPERAND	CN	ADRCST&L	SET FOR RESET RESTART	CT	ADDRS	INSTRUCTION
2527	PATCHA	0					6	09373	H 03794
2528		0	SAR	20			7	09379	G 00020 A
2529		0	BCE		ADRCNDE19,SYSL1.9	BYPASS RT IF LOOK SYSTEM	12	09386	G 03857 01257 9
2530		0	B		ADRCRP	GO TO ROUTINE	7	09398	J 03757
2531		0	H				1	09405	-
2532		END	START		D.E.B.	END OF ASSEMBLY			